

MARINE REVIEW.

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Question of War Tax on Charters.

The heavy war tax on vessel charters, about which so much has been said of late, has not been paid as yet by any of the shippers or vessel owners engaged in lake trade, and it is not probable that the law, in this regard, will be construed to apply to inland commerce. In accordance with instructions from the Lake Carriers' Association, Mr. Harvey D. Goulder went to Washington and spent three or four days there last week in an effort to get a ruling on the question from government officials. He left there on Saturday with the understanding that Senator Hanna and Congressman T. E. Burton of Cleveland would follow up the matter and probably secure a ruling by Tuesday of this week, but an answer from the internal revenue officials is still delayed.

It was not intended when Mr. Goulder visited Washington that he should make objection of any kind to features of the law relating to stamps on bills of lading, marine insurance policies, marine protests, etc., or even the license fee of \$20 annually that is to be paid by vessel brokers. This license fee must be paid, as well as the stamp taxes. All these items of tax are accepted by vessel men as being in accord with the intent of the law to have all business interests bear a part of the heavy expenses incurred by the government on account of the war. But it is quite plain that it was not the intent of the law to have vessels in domestic commerce, making short trips, some of them occupying less than a week, pay \$10 or more every time they are chartered. In taking up this matter with the commissioner of internal revenue, Nathan B. Scott, with the commissioner of navigation, and with Assistant Attorney General Boyd, Mr. Goulder prepared a brief, in which he shows that the law does not apply to "enrolled" tonnage but to "registered" tonnage, as clearly stated in the clause pertaining to charters. The lakes and other inland waters have no registered tonnage as known in the statutes or in the practice of the treasury department. This argument is borne out by all records of the bureau of navigation from the time of establishing that office. The term "register" is applied to the document given to a vessel engaged in other than domestic trade, and which must be surrendered before such vessel can engage in domestic trade. In title L of the revised statutes, section 4,318, special provision is made in respect to vessels navigating the northern lakes, requiring them to be enrolled (not registered), even though they may have occasion to trade with Canadian ports. This distinction in the statutes is uniformly observed in the treasury department in all its dealings with ships. But aside from this, there is another strong point against the charter tax on vessels in domestic trade. Lake traffic, as well as all inland water commerce, is governed in the war revenue measure, alike to the traffic of the railways and express companies, by that clause which makes the use of bill of lading or way bill compulsory, and requires each such document and every duplicate thereof to be stamped. It was certainly not the intention to put upon one class of carriers engaged in the carrying trade of this country the additional discriminating tax which would apply if the charter party tax was imposed upon enrolled vessels engaged in inland commerce.

Vigorous Opposition to a Proposed Law.

It seems exceedingly strange that it should have been possible for a measure such as that concerning sail vessels of over 700 tons, in opposition to which vessel owners all over the lakes have arisen this week, to have passed both houses of congress without having been called to their attention. The bill, which is said to have the endorsement of the Masters' and Pilots' Association, and whose existence may have been kept obscured with a purpose, is almost equally obnoxious in its original as in the amended form. As originally passed by the senate, it provided that masters and chief mates of all sail vessels over 700 tons shall be licensed, and also for the inspection of sailing vessels over 700 tons. As amended, previous to its passage in the house, the bill is still more objectionable, for in addition it provides that the second and third mates of steam vessels must be licensed and also exacts the licensing of all officers on barges in tow of steam vessels on the great lakes, further providing for the hull inspection not only of sailing vessels over 700 tons but of all sailing vessels carrying passengers. Mr. Minor of Wisconsin was the author of these amendments, and claimed on the floor of the house that they had the approval of the Lake Carriers' Association. Vessel owners in all lake cities have been energetic this week, however, in sending strong protests to their respective congressmen, and inasmuch as the bill as amended must again go to the senate, it is probable that the opportunity will be seized to effectually bury it in some committee. A bill for the inspection of sailing vessels and for the licensing of masters of such vessels would probably meet with approval from many vessel men, but this measure deals with second and third mates and engineers on tow barges, which is ridiculous, as there are no such officers.

Lieutenant Commander Ira Harris, U. S. N., well known to lake marine men through his connection with the Chicago Drop Forge & Foundry Co., the Cleveland Machine Co., and his work as purchasing agent and auditor of the American Steel Barge Co. of West Superior, Wis., is in command of the naval repair ship Vulcan, which has just departed for Cuban waters. The Vulcan has on board an equipment valued at \$300,000 and adequate to repair every class of naval vessel from a torpedo boat to a battleship.

Congratulations are in order with Edwin H. Smith of the Bessemer Steamship Co. He was married quietly in Cleveland, Tuesday. Mrs. Smith was Miss Nannie E. Shook of St. Paul, Minn.

Consolidation of Cleveland Dry Docks.

Arrangements have finally been perfected for a consolidation of the properties of the Ship Owners' Dry Dock Co. and the Cleveland Dry Dock Co. at Cleveland, under a plan that will transfer the control and management of the three docks owned by these companies to an interest representative of the Globe Iron Works Co. of Cleveland. The move has been in contemplation for weeks past, but the details were only perfected at meetings of the two companies held within the past few days. At the meeting of the Ship Owners' company it was decided by vote of the stockholders to increase the capital stock of the company from \$360,000 to \$750,000, such portion of the increase as necessary to be applied to reimbursing the stockholders of the Cleveland Dry Dock Co. for their property. The stockholders of the latter company, which has a capital stock of \$215,900, voted to sell their property outright to the other firm. The shareholders in both companies will be given stock in the new company on a pro rata plan. The division of new stock, to be based on earnings of the two companies, on inventories of property, etc., is understood to have been arranged in a manner satisfactory to both interests. The details are of interest only to the stockholders, who have been fully informed throughout the negotiations leading up to consolidation. It is understood that the management of the docks will be placed in the hands of Capt. W. W. Brown, who, for the past three years, has acted as manager of the Cleveland Dry Dock Co. No improvements in any of the docks are in contemplation at this time, although conditions are such that should it be desired, the larger dock at the Ship Owners' plant, which is now limited to vessels of 48 feet beam, could be readily enlarged, both in width and length.

Collision Might Have Been Serious.

Had the conditions governing the collision of the steamer State of New York and the whaleback steamer Henry Cort in the lake off Cleveland, Wednesday morning, been different, it is not difficult to see how the result might have been much more serious. As it was, the spoon bow of the whaleback struck the port paddlebox of the New York fairly and swept away the upper works for some distance aft. It may be argued that had the vessel been of some other type than a whaleback the collision would not have occurred at all, by reason of the increased probability of her lights being seen by the officers on the New York, but on the other hand, had a vessel with a high stem cut her way into the passenger boat it is not difficult to see the likelihood of more serious consequences. As it was the passengers were startled, the accident having occurred at 1 o'clock in the morning, but no one was injured. The New York is undergoing repairs at the works of the Cleveland Ship Building Co. at Cleveland, and a week may be required for their completion. The hull of the vessel was not injured and the steamer will not have to be docked, all the damage being above the water line. No effort has as yet been made to fix the blame for the collision, and it is probable that no legal complications will ensue, as the risk in both cases is held by insurance companies represented by Johnson & Higgins of New York.

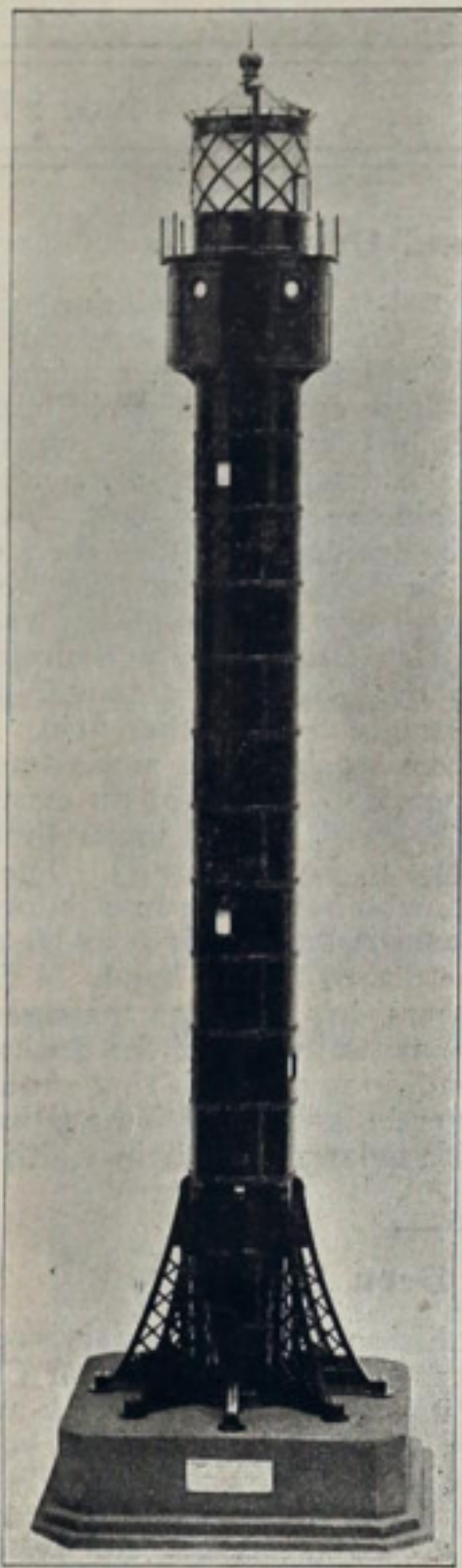
The French Line Disaster.

If later reports confirm the first statements regarding the actions of the members of the crew of the French transatlantic liner La Bourgogne, when she was sunk in collision with the British iron sailing vessel Cromartyshire on the Newfoundland banks, July 4, an almost crushing blow is likely to be dealt the French line. No criticism is offered to the conduct of the officers, save that they failed utterly to control their men, but the members of the crew did not manifest the slightest trace of the influence of discipline and were guilty not only of the most flagrant disregard of the rights of the passengers, but of the ordinary demands of civilization with regard to the care of women and children. However, the moral effect will not be lost, for if these reports are proven true, it is not reasonable to suppose that the public will care to patronize a line where it is possible for such conditions to exist. It would seem as if enough persons were saved from La Bourgogne to give, in conjunction with the officers of the Cromartyshire, some details of the circumstances of the collision as regards signals, etc., details which are as yet lacking. La Bourgogne was a steel screw steamer of 7,395 gross tons; 494½ feet in length, 52 feet beam, 34 feet depth; of 8,000 horse power, and built by Forges & Chantiers, La Seyne, in 1886.

A Veteran Ship Builder's Invention.

Mr. Stephen R. Kirby, the father of Frank E. and F. A. Kirby of the Detroit Dry Dock Co., and who is now residing in New York, has been devoting considerable time of late to the perfection of an invention for determining great circle courses, practically instantly, or at least within a few minutes after ascertaining the ship's true position by observation—knowing the position of the place bound to. From what Mr. Kirby says of the device on which he is working, it is not designed so much for the convenience of the average navigator as for use by officers of the navy. Referring to his investigations regarding sound in fog, Mr. Kirby writes: "The fog problem is too erratic to be depended upon. One thing is certain, however, the altitude of the listener must be about the same as that of the sounding instrument, if the sound is to be heard at all distinctly. Otherwise the sound will be deflected more or less or not heard at all. I have very often noticed such phenomena and have during my own experience discovered some very queer cases."

Two New Lake Light Houses.



Work was begun last week upon the erection of two new lake light-houses, one at Sturgeon Bay canal and the other at Devil's island, Wisconsin. These two light towers, although of moderate cost as compared with many other lake lights, are interesting as representing modern development in structural iron work of this kind. They were built by the Variety Iron Works Co. of Cleveland and are of different dimensions but identical in design. The accompanying picture is from a model of the Sturgeon Bay light.

The Sturgeon Bay structure is 91 feet in height from the ground to the focal plane of the light, while that at Devil's island is but 71 feet. Each is 8 feet in diameter. Each structure is to rest upon a cast iron foundation disk, which is to be anchored to a concrete foundation, 29 feet square and 8 feet deep, by anchor bolts $1\frac{1}{2}$ and 2 inches diameter and 7 feet 6 inches in length. The outer shell of $\frac{1}{2}$ inch and the inner shell of $\frac{3}{8}$ inch are open hearth steel of an ultimate tensile strength of from 54,000 to 62,000 pounds per square inch. Each tower will be supported by eight buttresses. In the case of the Sturgeon Bay structure these are 16 feet in height and give the tower a total base of 21 feet, while those at the Devil's island tower are 12 feet and give a total base of 16 feet 6 inches. The watch room and lantern in each tower will be accessible by a cast iron spiral stairs built between the two shells and fastened to the inner shell. The watchroom in each structure will be 12 feet in diameter by 7 feet in height, while the lantern, which is revolved by a clock mechanism, the weight for which is suspended within the inner tower, is 17 feet 9 inches in height by 8 feet 7 inches in width. The inside shells of the

towers are about 2 feet in diameter, and the structures are still further strengthened by eight sets of inner bracings extending radially the entire height to the watchroom floor—78 feet in the case of the structure at Sturgeon Bay and 58 feet in the case of the Devil's island tower. The watchrooms are to be lined with plates of $\frac{1}{8}$ -inch sheet steel, held together by vertical and horizontal steel battens, which are screwed to the plates by screws neatly countersunk. The Sturgeon Bay tower will cost about \$8,000, while the cost of the structure at Devil's island will be in the neighborhood of \$7,500. Both towers will be completed by August 1, 1898.

Wrecks and Casualties on the Lakes.

Officials of the United States weather bureau have just completed an exhaustive list of wrecks and casualties on the great lakes and connecting rivers due to fog, smoke or heavy weather during the past three years—1895, 1896 and 1897. A summary of the report, which was prepared by Marine Agent Norman B. Conger under the direction of Willis L. Moore, chief of the bureau, and which has been published in pamphlet form, shows that during this time eighty-one vessels passed into history, and 181 others were damaged to a greater or less extent by the elements. Eighty-three of the 262 disasters recorded can be attributed to foggy or smoky weather. The grand total valuation of vessels lost or damaged as a result of foggy weather is \$1,042,698, or more than a third of the aggregate loss of the whole period. Ninety lives were lost during the three years, the greatest loss occurring when the steamer Chicora foundered on Lake Michigan, Jan. 21, 1895, the entire crew of twenty-six persons perishing. The next largest loss occurred Nov. 6, 1897, when nineteen of the steamer Idaho's crew perished with the foundering of that vessel off Long point, Lake Erie. The loss of life in these two disasters constitutes one-half of the total loss of the three years. The information collected in this connection is admirably summarized in the following table:

WRECKS AND CASUALTIES ON THE GREAT LAKES DURING 1895, 1896 AND 1897, CAUSED BY FOG, SMOKE OR HEAVY WEATHER.

LAKES.	No. of vessels.	No. total losses.	Estimated value	Due to fog.	Due to gales.	No. partial losses	Estimated value	Due to fog.	Due to gales.	Total estimated losses.	No. lives lost.
Superior	36	17	\$ 416,900	0	12	24	\$ 171,102	8	16	\$ 588,002	8
St. Mary's river	12	0	0	0	0	12	34,900	10	2	34,900	0
Michigan	89	33	795,068	4	29	56	207,878	21	35	1,002,946	50
Huron	59	13	447,300	4	9	46	400,425	21	25	847,725	3
St. Clair and Detroit rivers	9	0	0	0	0	9	31,000	7	2	31,000	0
Erie	46	21	305,175	1	20	25	90,375	2	22	305,550	26
Ontario	11	2	47,300	0	2	9	84,600	4	5	131,900	3
Totals	262	81	\$2,011,743	9	72	181	\$1,020,280	74	107	\$3,032,023	90

The same old trio on a bran new schedule.—There's been no more added—three express trains in each direction were considered sufficient—but it was deemed desirable to make faster running time with some of our trains, so the new schedule of the Nickel Plate road was put into effect June 26.

121, July 12

Defending the Erie Canal.

Buffalo, July 6.—I read with something akin to amazement the following sentence in the last number of the Review: "The canal business last year was, in fact, the smallest for twenty-five years past, and this year it is practically nothing, even since repairs have been made and the canal has been open."

It would seem that the poor canal has enemies enough from the outside without others arising within the very camp and misrepresenting it after that fashion. The writer is apparently a Buffalo elevator man, who treats his own subject plainly and fairly, but it would be hard to deal a more unfair blow than this one which he aims at the canal. Does he know whereof he writes, and is falsifying on purpose, or does he merely fire at random? At any rate, the true statement should be given. In the first place, the canal, which should have been open in March, and would have been if private enterprise controlled it, was nominally opened about the middle of May, though newspaper reports usually make May 22 the opening date. Even this is allowing too much, as the boats moved, according to a boatman's statement, only six days in May. First, it was held back to accommodate the contractors. Continued breaks did the rest. Still, the canal has carried 6,300,000 bushels of grain out of Buffalo in the month or so that it has been running, in spite of the distrust caused by the breaks having practically ruined the up-bound trade and driven a large amount of down-bound trade to the railroads. Last season, with all of May but the first week, the grain carried was 7,500,000 bushels, and in 1896, with all of May, the canal carried 11,900,000 bushels to the end of June. It will be seen that the showing this season for the time is better than either of the other two. Now, as to the entire amount shipped by canal and rail. During one week in May the canal carried more than twice the amount of grain that all the roads did, another week the excess of the roads was small, and last week the canal carried 1,159,000 bushels of grain and malt, to 1,617,000 bushels by the roads.

The canal has done all that it has had boats for, and inside of a week boatmen reported that there was over 600,000 bushels of grain waiting for the canal, and which would probably wait till the boats were to be had. I would like to inquire what other branch of the interior water traffic is doing all it can just now. It is true that the canal is much reduced by competition, by the dilatory practices of the state, by the official effort to open it as late as possible, so that it always misses the first great grain fleet from Chicago, and by lack of enterprise on the part of the boatmen, till the fleet is now very small. The high price of wheat drove all that to the roads, at first, as the canal boatmen could not insure it, and yet they are making a little money at 2 $\frac{1}{2}$ cents on corn to New York. Boatmen are today more hopeful than they have been for a long time, and if the railroad pool is continued they will make a good showing this season.

Another point and I stop. Some Lockport paper has lately said that it ought to have been easy to wreck the canal for less than \$9,000,000. This fling, like the one I set out to head off, is likely to mislead some one, on account of its apparent basis of fact, but boatmen at least know that the late work on the canal has improved it immensely and they are not much disappointed to find that the appropriation did not do the entire work. Waste and incompetence have been discovered, but the Erie canal is in much better condition today than ever before.

JOHN CHAMBERLIN.

No Appropriations for Revenue Cutters.

The form in which the sundry civil appropriation bill was finally passed by congress is pretty certain to induce certain complications in the revenue cutter service. In its original form the bill provided for the construction of \$45,000 revenue cutters to replace the Hamlin at Boston and the Washington at Philadelphia; \$160,000 cutters to replace the Seward, for service in the Gulf of Mexico, and the Colfax at Charleston, S. C., and a \$250,000 boat for service in the vicinity of the Columbia river bar, Pacific coast. Upon the insistence of the house of representatives all of these provisions were stricken from the bill, which fact adds greatly to the probability that the revenue cutters taken from the great lakes to the Atlantic coast for service during the war, will not be returned. All of the great lakes cutters are new and powerful vessels, admirably suited to service on the coast, where, of course, a revenue vessel is liable to be compelled to face heavier weather than on the lakes. Moreover the officials of the revenue cutter service, now that they have the new lake cutters completed and have had a chance to give them a trial in actual service, have come to the conclusion that vessels of the type of the Gresham, Algonquin and Onondaga are somewhat too large for the greatest efficiency on the lakes and that it would be still more advantageous if vessels of lighter draught were provided. In view of these circumstances there is certainly added reason for believing that if the lake-built revenue cutters are returned to the revenue cutter service at the close of the war they will be utilized for Atlantic coast work. There is a possibility that some of the smaller vessels of the auxiliary fleet—craft that could readily pass the canals—may be apportioned to the revenue cutter service for use on the lakes, but it is far more likely that the fresh water branch of the service will be obliged to depend upon the Fessenden until such time as new cutters can be built on the lakes.

White Law on the St. Lawrence.

When C. H. Keep of Buffalo, secretary of the Lake Carriers' Association, heard a few days ago that a bill had been introduced in the senate amending the White law by making it applicable as far east as Cape Vincent instead of Montreal, he immediately wrote to Senator Platt of New York regarding the matter. Senator Platt wrote in reply: "I duly received your communication, and took immediate occasion to ascertain from Senator Frye of the committee on commerce the status of the proposed legislation referred to by you. I find that there is a bill before that committee practically repealing the White law on the St. Lawrence river; but there is no possibility of the bill receiving consideration at the hands of the committee, during the present session, at least. The matter is considered one of too great importance for hasty decision, and there is no prospect now for its receiving any consideration whatever."

Value of a Mesabi Ore Deposit.

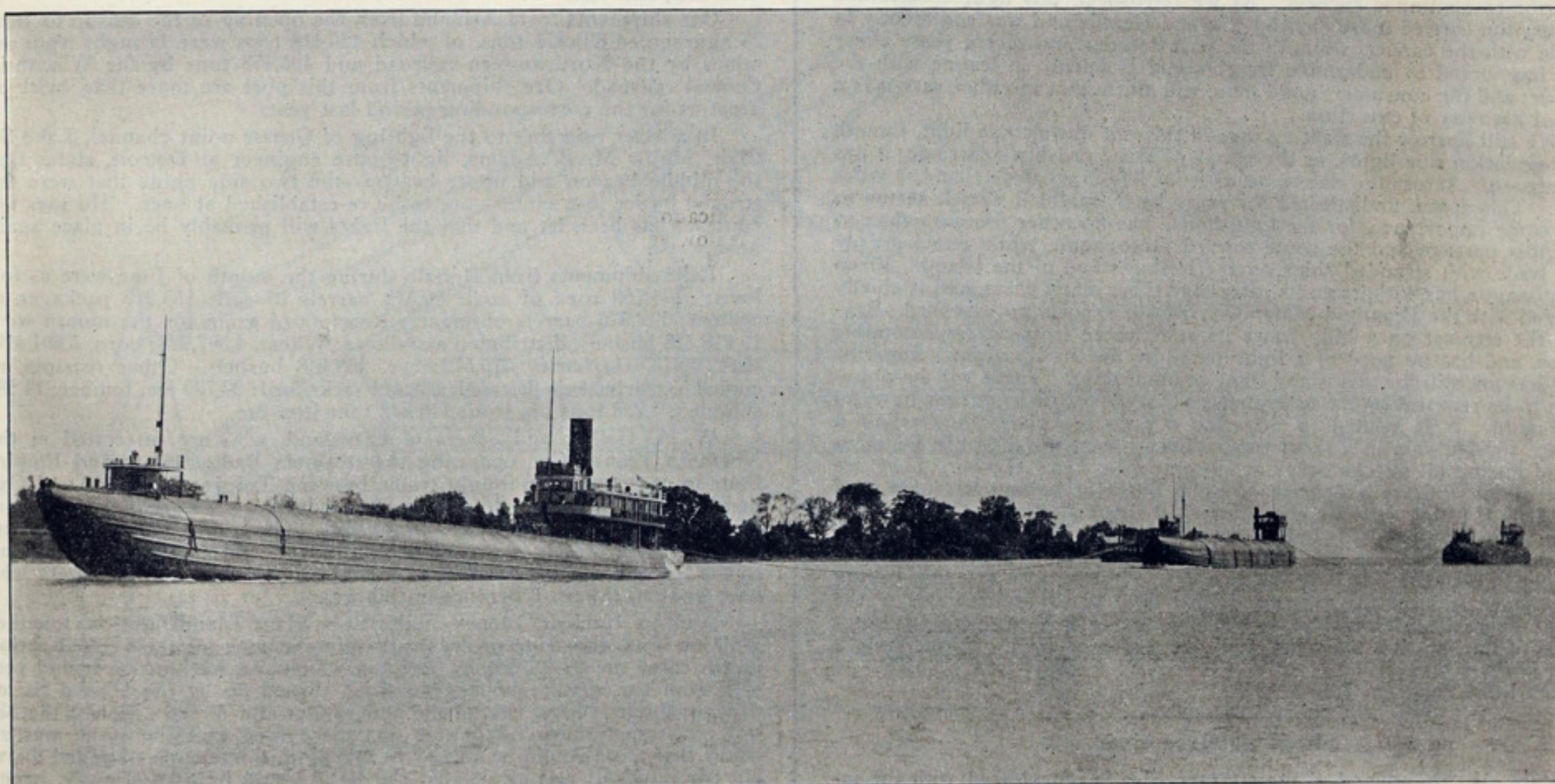
The extent and value of the Biwabik ore deposit on the Mesabi range is again the subject of considerable discussion, on account of the transfer of the mine recently from Tod, Stambaugh & Co. to the Brier Hill Iron & Coal Co. and the Youngstown Steel Co. of Youngstown. One of the Duluth newspaper correspondents says: "The deposit contains something over 30,000,000 tons of ore, practically all of which is Bessemer. There are two grades of ore in the mine, one a brown, which overlies a dark blue. Both are Bessemer, but the phosphorus declines sharply with the change in color, and the underlying blue is better than that above it. The company is now mining a lot of brown ore, and is said to have sold a quantity at \$2.20 a ton, a price that cannot bring much return, even though a recent concession in royalty has been made. The mine appears, to judge from a very recent visit, to be in magnificent shape for big work, and the intention of the management seems to be to put a shelf for mining on the brown ore and operate by two levels with steam shovels. Nearly 300 men are at work, half in stripping ahead on the ore body and the rest in mining. The company has been shipping 150 carloads of ore daily, but expects to double this quantity at once. Control of this mine by the two iron manufacturing companies adds another great deposit to the list of Mesabi properties operated directly by consumers, though the ownership by Tod, Stambaugh & Co. was in part in the same line. The Biwabik was the first considerable ore body opened on the Mesabi in 1892, and has been steadily operated ever since. The efforts of John T. Jones, its first mining captain, to open the mine for a steam shovel proposition almost wrecked its first lessees, of whom P. L. Kimberley was one, though Mr. Jones' ideas were right if unlimited capital had been forthcoming. There was a surface

A Large Dividend Declared.

The Calumet & Hecla Mining Co., operating the famous Lake Superior copper mine, last week paid a dividend of \$1,000,000. This is the regular quarterly dividend, and with it included the mine will have paid the stockholders in the company the sum of \$53,850,000 within thirty years. This is a larger amount than has ever been paid in an equal space of time to the stockholders of any gold, silver or diamond mine in the world. During the fiscal year ending the latter part of April last, the Calumet & Hecla paid dividends amounting to \$4,000,000, and in the calendar year 1897 the dividends paid aggregated \$5,000,000. Last month a single share of \$25 par value sold on the Boston stock exchange for \$575. The company's capital is 100,000 shares of \$25 each, making the nominal capital of the mine \$2,500,000 as original value, while the actual market value on the basis of this sale of a single share would be fully \$57,500,000. This is the largest market valuation ever placed upon any mine and is equal to the aggregate of the market value of all the copper mines in the Lake Superior district four years ago.

To Hoist the United States Flag.

Should the measure pass and become a law before the present wave of patriotism has subsided, pretty general commendation is likely to be evoked by Senator Frye's bill introduced in the senate, recently, relative to the flag of the United States on merchant vessels. The bill provides that a registered or enrolled vessel of the United States shall hoist the flag of the United States on entering or leaving any foreign port; on entering or leaving any port of the United States if the vessel is of fifty



[From 1898 Blue Book of American Shipping.]

A Whaleback Tow in the Rivers—Steamer E. B. Bartlett and Two Whaleback Barges.

of earth as deep as 50 feet at one end of the deposit and largely composed of boulders and hard pan, and the expense of getting this off and so arranging and cutting that trains could get into the mine and out again with economy in power and time was tremendous. The east and west cuts were finally connected and the mine passed out of the Kimberley-Sharon control to that of the men who had advanced funds. A royalty of 50 to 55 cents a ton and an annual minimum output of 300,000 tons also proved a tremendous handicap in dull times. In the opening of the mine it was estimated that its entire stripping would require the removal of 2,900,000 cubic yards of earth, and this total has since been added to. All the ore will be removed by open pit mining."

Prices Paid for Prizes.

Marine men will find something of interest and possibly some food for thought in the range of prices which prevailed last week at the auction sale at Key West, whereat there were sold the condemned prizes, captured by United States warships. The steamer Argonauta was bid in by the United States government for \$17,000, to be used as a transport. The other vessels brought the following prices: Brig Frasnita, of 325 tons net, \$920; barkentine Lorenzo, of 281 tons net, \$3,010; bark Carlos F. Roses, 524 tons net, \$1,310; steamer Ambrosia Bolivar, of 106 tons net, \$4,350; Severita, \$1,350; Santiago Apostol, \$2,700; Fernandita, \$500; Espana, \$1,310; Poder di Dios, \$1,010; Antonio Suarez, \$1,260; Orient, \$350; Quatro de Setiembre, \$470; Antonio y Paco, \$1,910; Lola, \$800; Engracia, \$1,000; Parquitta, \$490; Mascotta, \$360; Tres Hermanos, \$575; Pinero, \$1,070; Sofia, \$1,550; Mathilde, \$1,600; Candita, \$950. W. A. Merryday purchased the Lorenzo and John W. Sawyer bought the Ambrosia Bolivar. The Parquitta was a sloop, and all the other vessels not already described were schooners, mostly fishing smacks, ranging from 120 tons, in the case of the Mascotta, to 25 tons, which was the net tonnage of the Fernandita.

gross tons or more; on signal made by a vessel of the navy or of the revenue cutter service of the United States. Failure to comply with the provisions of the act shall render the master liable to a fine not exceeding \$100. It is proposed to have the act take effect Aug. 1, 1898.

A lively tilt ensued in the senate Monday when the committee on commerce unanimously recommended the bill, and an effort was made to have the senate proceed to its consideration when reported instead of having it placed on the calendar. Senator Hale opposed the measure, because, as he said, he did not believe in legislation which tends to make trouble for our navigation interests by imposing penalties. Senator Pasco, who, in the absence of Senator Frye, spoke for the committee, stated that the United States is the only commercial nation of the world that is without such regulations as are described in the bill, adding that the measure was drawn after the British act requiring such vessels to display the British flag under similar circumstances. The objection of Senator Hale caused the bill to be placed on the calendar.

Further evidence of the fact that collisions are expensive is afforded by the decision of Secretary of the Navy Long that the government is indebted to the owners of the British steamship Foscolia in the sum of \$218,889.58 as the amount of damage sustained by that vessel from her collision with the cruiser Columbia on May 28 off Fire island light-ship. The judgment of the court of inquiry was that the collision would not have occurred had the usual precautions been taken on board the Columbia, but that the condition of war did not admit of a display of lights or the sounding of whistles. Congress will be asked to appropriate the amount of the claim.

Ask agents about Sunday outings on the Nickel Plate road. Parties of five or more can go anywhere on the Nickel Plate road not to exceed one hundred miles at a round trip rate of \$1.00. 108, July 31.

Michigan Island Light.

Editor Marine Review:—With many others I have been passing to the southward of Michigan island occasionally for years. In approaching from the northeast, when land is visible at night, we find its dark front presented to us with its low extended Gull island shoal hidden in the shadow, and to avoid which requires practically a distance of 2 miles northeasterly. After closing Outer island light for an hour, if Michigan island light is still invisible, we come to a course of due south, and if the weather is clear a splendid light comes into view from the southwest end of the island, at a range of nearly W. by S.; and when well opened, course is changed for La Pointe in security. In steering from Eagle Harbor up with northerly winds this condition will often occur: Michigan island light serves in leading clear of the islands, leaving them to the northward but it is not calculated to assist in safely approaching from all points of the wide waters eastward and northward.

We are thankful to have our courses confirmed by any light coming suddenly into view, but in these expeditious times visibility at long range is better. Those who of late years have found the Gull in front will remark that it is a very dark, deceptive approach, and with the knowledge that there is a light beaming and lighting an obsolete passage on the other end of the island (among other reflections as their ship rests on the shore) they are sadly conscious of the fact that the glims of the past are not always lights for the future. The propriety of a change in location for this light-house is obvious. We are not getting the benefit of its power where it is at present—visible 20 miles in clear weather and yet obscured to one of the best interests of commerce. There are those still living who collected freight in Ontonagon that taxed the energies of the consignee, and, leaving there, Michigan island light guided them through to Bayfield and Superior to continued success. As we retrospect, this light contributed to every ton carried those days by Jew and Gentile and was confidently in league with the carrier, while in the past decades and recent years every light has served to undermine freights and is openly in league with the shipper; and the consumer, good man, will affirm that in either case it is a lighted highway of extortion.

We still borrow the slanting rays of this not-unwelcome light, though like regulation side lights, or the lamps of His Lordship's carriage, it has its purpose. Across the waters on its front lies Magdalene island, 3 miles away. This space, undisturbed for years by a freighted vessel, seems to have some importance, for the light-house has no other pretense than to light this passage and the route toward Ontonagon, while wreckers ply their trade with stranded ships on the business end of the island. From it Ontonagon has withdrawn its patronage these many years, and is chiefly engaged with the Diamond Match Co., whose exports go eastward. Bayfield, the city set on a hill, draws its subsistence from an imperceptible source, and has no need of a light-house by day or by night. Superior alone has use still for this island light of other days. There will be opposition to its removal by the craftsmen of that place, for by it they have no small gain. It is related to Superior dry docks, where they repair a broken, twisted ship in a short time. They are opposed to the Dunham idea of having all wrecks occur at Presque Isle, Lake Huron. They are prepared for and are solicitous of Lake Superior having its snare, and they have a foster care for this unmarked shoal of the sea. This light-house, as it now stands, is one of the advance agents of their prosperity. The proximity of these dry docks was a natural conclusion; they are a blessing in disguise. It is probably a safe conjecture to say that twenty years hence will see the removal of this light to the eastern end of the island. Time, the tomb builder, in his fierce career, is ever changing things for the better, so that they that shall come after will view things from a wider horizon.

REFLECTIONS.

On Lake Superior, July 5, 1898.

Shoal at Gros Cap.

Capt. M. Mulholland of the steamer Alva is not pleased with the intimation from Leo Bernard, keeper of range lights on the Sault river, that he was mistaken about the existence of a shoal spot near Gros Cap, especially as reports from other vessel masters confirm what was first said about the obstruction. In a letter to the Review Capt. Mulholland says: "I see by the papers that Mr. Leo Bernard claims that I must be mistaken regarding the discovery of a shoal spot on the Birch point ranges near Gros Cap. When I arrived at the 'Soo' I met Mr. Bernard, and he requested me not to make a report of the matter, as he claimed it would be detrimental to his interests, but I considered it my duty to all concerned to report the obstruction. The Alva touched very lightly, but if the spot is not found, I would not be surprised to hear of the whole bottom being knocked out of some vessel, as I regard it as a most dangerous spot. If an arrangement is made with the government engineers, I will, any time I pass up at the 'Soo' with the Alva, tow them up in a small boat and can land them very close to the shoal, which is composed of white sand and gravel. I am not in the habit of making reports of this kind without cause."

As this shoal is in Canadian waters, the attention of Col. Wm. P. Anderson, chief of engineers of the department of marine and fisheries, has been called to it, and he has promised to take steps to have it marked. The Canadian officials have also promised to give attention to the matter of placing black spar buoys along the west bank of Bar point channel, Detroit river.

It seems unlikely that the United States battleship Wisconsin, building at the yard of the Union Iron Works Co., San Francisco, will be finished in time to be of any service in the present war. There is at present a slight delay awaiting the arrival of the armor and the vessel could not go into commission in less than six months, even under the most favorable circumstances. The armament for the Wisconsin has been procured from other vessels.

The spring change of time on the Nickel Plate road has shortened up the schedule of trains. Our peerless trio of daily express trains are better than ever.

119, July 12

Around the Lakes.

The weekly statement issued by the bureau of navigation gives the tonnage of the whaleback steamer Alexander McDougall, recently launched at West Superior, as 2,662.94 net, or 3,686.39 gross tons.

James A. Dumont, supervising inspector-general of the steamboat inspection service, informs the Review that there is no foundation for the report recently sent out that he had been appealed to to establish a system of uniforms for the officers of the merchant marine on the lakes.

The Union Carbide Co. of Chicago has awarded to the Walker Manufacturing Co. of Cleveland the contract for the electrical machinery for the mammoth plant for the manufacture of calcium carbide to be erected at Sault Ste. Marie, and which is to be operated solely by water power.

Shipments of lumber by lake from Bay City during the month of June were as follows: To Tonawanda, 4,180,000 feet; Cleveland, 675,000 feet; Toledo, 450,000 feet; Chicago, 450,000 feet; Buffalo, 425,000 feet; Detroit, 250,000 feet; a total of 6,430,000 feet, as compared with 6,383,055 feet during June, 1897.

Capt. William D. Tobin, who had sailed the lakes for fifty years, died, a few days ago, in Erie, Pa. He was in the revenue-cutter and later in the light-house service, and was engaged on surveys of Lakes Superior, Huron and Michigan, in which service he was captain of the Serch, the first iron vessel on the lakes.

Capt. Frank Perew, well known to the vessel interests, died at his home in Buffalo this week. He began his career on the lakes early in life, became the master of a vessel, and finally an owner of lake vessel property, which, however, he disposed of when he retired from active business six years ago.

Ore shipments from Ashland from the opening of the season to June 25 aggregated 831,871 tons, of which 426,418 tons were brought from the mines by the Northwestern railroad and 405,453 tons by the Wisconsin Central railroad. Ore shipments from this port are more than twice as great as for the corresponding period last year.

In a letter referring to the lighting of Grosse point channel, Lake St. Clair, Major M. B. Adams, light-house engineer at Detroit, states that the middle beacon and upper beacon—the two side lights that were destroyed by ice last winter—are to be re-established at once. He says the contract has been let and that the lights will probably be in place again next week.

Lake shipments from Buffalo during the month of June were as follows: 174,709 tons of coal; 99,572 barrels of salt; 155,219 packages of cement; 142,376 barrels of sugar. Receipts of grain for the month were 15,918,478 bushels, distributed as follows: Wheat, 4,507,228; corn, 5,691,419; oats, 4,675,611; barley 575,572; rye, 468,648 bushels. Other receipts included 50,000 bushels flaxseed; 186,424 sacks feed; 22,790 feet lumber; 14,285 shingles; 4,298 tons pig iron; 118,242 tons iron ore.

W. A. Collier and others of Cleveland, who are interested in the Northern Transit Co., operating the steamers Badger State and Empire State in passenger and freight traffic between Toledo, Cleveland and Ogdensburg, are certainly deserving of success for the excellent manner in which this new service has been organized. The trip to and from Ogdensburg on these vessels is a most delightful one, and everything pertaining to the management of the vessels is highly spoken of by passengers who have gone to the St. Lawrence in this way.

Andrew Hackett, keeper of the Bois Blanc island light, is, together with his sons, deserving of the thanks of vesselmen for their recent action in, for three successive nights, keeping watch and warning up-bound vessels from the vicinity of a large stone turned up by the United States dredge, about 100 feet east of the new ranges and directly abreast the old mill at Amherstburg. When it was discovered that the stone was so heavy that there would be a delay in raising it, a light was stationed there, but Mr. Hackett was afraid that the light would be carried away, hence his generous action.

Recovery of the Spanish Cruisers.

Marine men who are best informed on such subjects seem to generally coincide in the opinion that it ought to be entirely possible to recover the Spanish cruisers beached on the coast near Santiago at the destruction of Admiral Cervera's fleet a few days ago. The navy department has closed an agreement with the Merritt & Chapman Wrecking Co. of New York to undertake the work of recovering the cruisers Cristobal Colon, Oquendo and Maria Teresa, and tugs and wrecking apparatus will be forwarded with all the dispatch possible. Government officials have come to the conclusion that it is impracticable to do anything toward the recovery of the cruiser Vizcaya or the torpedo boat destroyers Pluton and Furor. The other cruisers, however, according to telegraphed reports, are beached under circumstances as favorable as could exist, and certainly the fire which is reported to have broken out on the vessels can have done no serious damage. From a marine standpoint great interest attaches to the action of the cruiser New York in ramming the Cristobal Colon. Several hours after the latter went ashore head on, she floated and was beginning to sink, when the New York, using fenders to break the force of the blows, rammed her several times, pushing the Spanish vessel up on the beach. Neither vessel was injured.

The naval board of auxiliary vessels, which was formally dissolved last week, had inspected an average of three vessels per day since it met for the first time on March 8, last. Official reports in detail were made to the navy department on 250 boats, and the government, acting upon the recommendations made by the board, has expended \$9,000,000 for vessels, exclusive of the outlay for American liners chartered for auxiliary cruisers. In addition to the vessels inspected by the board a number were inspected specially at Philadelphia, Baltimore, Boston, Halifax, Chicago and Cleveland.

Get particulars from agents regarding \$1.00 excursion tickets offered for sale by the Nickel Plate road on Sundays, to parties of five or more.

Automatic Shovel for Unloading Ore.

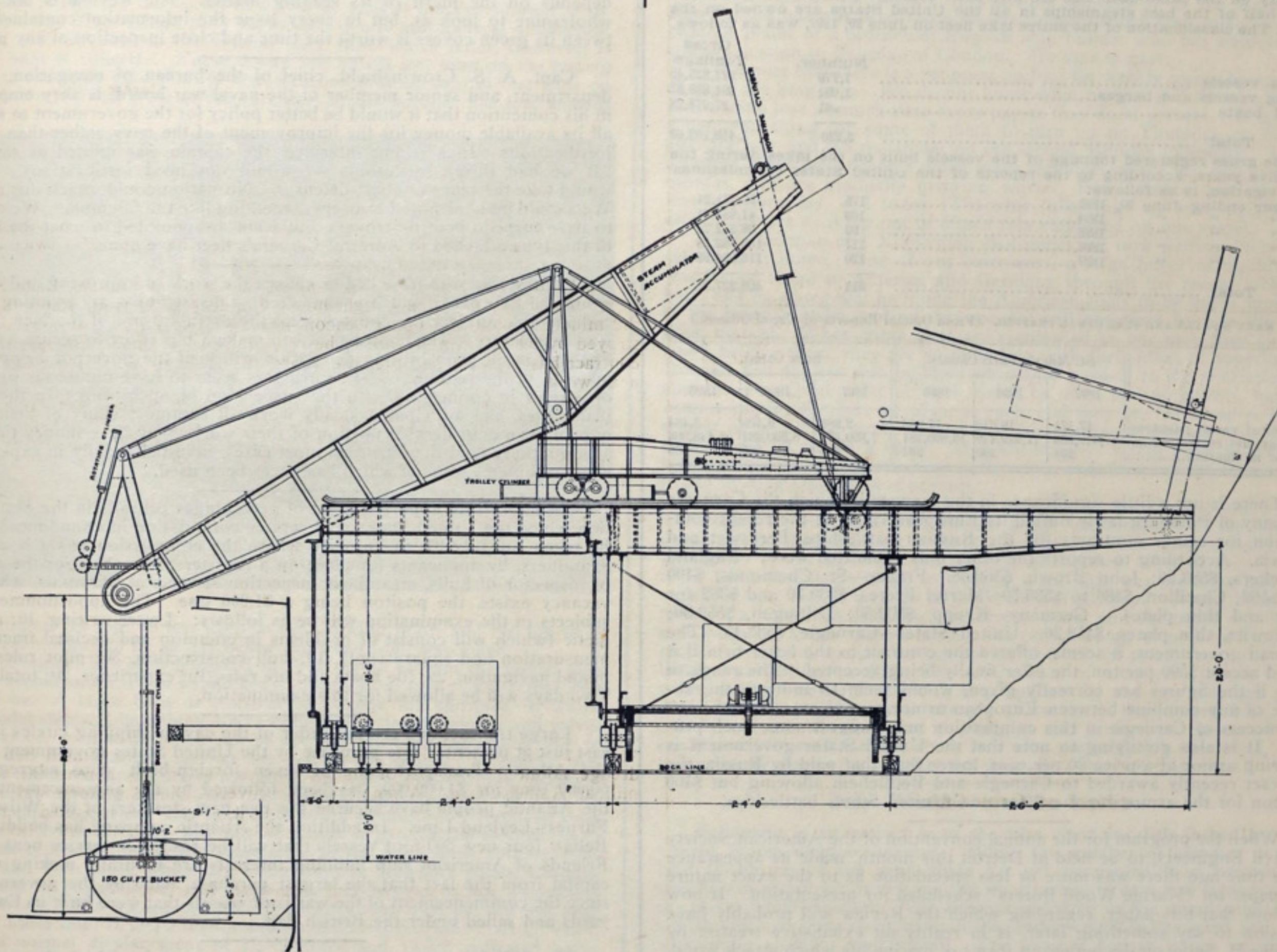
Nowhere on earth are commodities like coal and iron ore handled with dispatch anything like that which prevails on the lakes. The rapid transfer of cargoes to and from ships is the one feature of lake commerce that has attracted most attention; it has contributed more than anything else to reductions in carrying charges that have finally brought the cost of moving a ton of freight on the lakes down to figures lower than are found in transportation lines in any other part of the world. The car dump machine for transferring coal from cars to vessels makes it possible to load a ship of 5,000 or 6,000 tons capacity in a single day. At immense ore storage docks in the Lake Superior region cargoes equally large are transferred by means of chutes to modern lake carriers in a few hours. Hoisting and conveying machinery at the receiving docks on Lake Erie has also been developed in a wonderful manner, and by working large forces of men under ten or twelve big hatches in the largest ships, they are often unloaded in little more than an ordinary working day, and in some cases the ore is transferred direct to cars.

But in the unloading of ore the labor cost is heavy, and operations are limited to the number of men that can be worked advantageously in

through a hatch, and turned in any direction, its radius being about 9 feet, which, of course, would enable the scoop to reach to the bilge. After the shovel has been closed, it is lifted from the hatch and run back over the cars. It is claimed by the inventor that each machine will handle 300 tons per hour from boat to cars. It is further claimed that the machine will take out from 90 to 95 per cent. of the ore in a hold. Under Mr. Hulett's estimate, two men will be required to operate each machine and three men to clean up the remnant of ore which cannot be caught with the shovel.

The Shoal Near Raspberry Island.

The report of the stranding of the Minnesota line steamer *Marina* on a shoal near Raspberry island, which has been prepared by Capt. J. W. Morgan, master of the vessel, for submission to the proper government officials, as mentioned in the last issue of the Review, contains further particulars of another bad spot on Lake Superior that must be avoided by deep-laden vessels. The statements made by Capt. Morgan have been embodied in a letter to the light-house inspector of the eleventh district by Capt. George P. McKay, chairman of the committee on aids to navi-



The Hulett Automatic Unloading Machine.

the ship's hold while shoveling into the buckets. The problem of a machine that would scoop up this ore, instead of having it shoveled into buckets, has therefore been given considerable attention by men who have developed the car dumps and other machines. Many difficulties have, however, presented themselves, not the least of which was the certainty that expense involved in experiments would be very heavy, while the problem of devising and so arranging machinery as to secure anything like an equal degree of efficiency with the various sized boats trading to a dock has been a decidedly puzzling one. It is well known that the advisability of introducing a machine of this kind was considered while plans were being made for equipping the Carnegie docks at Conneaut, but the objections noted above were considered sufficient to defer action in the matter. There can be no doubt, however, of the ultimate adoption of an unloading machine, although there is every reason to believe that the process of transition to be passed through will be quite as lengthy and discover changes quite as radical as marked the evolution of the car dumper.

As the pioneer of this form of labor and time-saving machinery interest attaches to the design presented in the accompanying engraving. This is an automatic unloading machine patented by Mr. Geo. H. Hulett. The power for operating the machine is furnished by a boiler mounted in the lower frame and a small engine for moving the machine from hatch to hatch. A steam pump and a steam accumulator furnish the water under pressure to operate the automatic shovel, which is attached to a mast which is in turn attached to a walking beam. The shovel is of the clam-shell type, has a capacity of 10 tons, and is operated by a hydraulic cylinder. To operate the shovel, the mast, which revolves in a complete circle, and in which the operator is stationed, is run out over the boat, lowered

gation of the Lake Carriers' Association. Capt. McKay says in his letter:

"Capt. James W. Morgan of the *Marina* says he was not on Raspberry island, but was about half a mile from Raspberry island light and abreast of it. His vessel was drawing 18 feet aft and 17 feet 6 inches forward when she went on. At her stem there was 22 feet of water and all around her 19½ feet. She was steering at the time S. E. by S. In releasing her, about 600 tons of iron ore was jettisoned on the inboard side, or rather the side toward the light. There is now only 4 feet to 6 feet of water over this ore. I thought I would call your attention to this accident as soon as possible, and have just secured these particulars from the captain of the vessel. John Eddy, keeper of the light, would probably be of assistance to you in locating this spot. It would seem that as the shoal on which the vessel struck, as well as the jettisoned ore, will now be directly in the track of all vessels, including the passenger ships, bound in and out of Ashland, that this matter is of considerable importance. Of course, it would be well if a gas buoy could be stationed on a place like this, but if not, it would seem that some provision should be made for some kind of a light on any buoy that would be placed there."

In a letter Inspector Duncan Kennedy of the eleventh light-house district states that steps will at once be taken to properly mark the shoal on which the *Marina* struck.

The unexcelled dining car service on the Nickel Plate road.—Beginning Monday, June 20th, breakfast will be served a la carte, on dining cars of Nickel Plate road. 85, July 14

Low rates to Chautauqua.—The Nickel Plate road will sell thirty-day limit excursion tickets July 8. Inquire of agents. 115, July 7



DEVOTED TO LAKE MARINE AND KINDRED INTERESTS.

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The books of the United States treasury department on June 30, 1897, contained the names of 3,230 vessels, of 1,410,102.60 gross tons register in the lake trade. The number of steam vessels of 1,000 gross tons, and over that amount, on the lakes on June 30, 1897, was 399, and their aggregate gross tonnage 769,366.68; the number of vessels of this class owned in all other parts of the country on the same date was 314, and their tonnage 685,709.07, so that more than half of the best steamships in all the United States are owned on the lakes. The classification of the entire lake fleet on June 30, 1897, was as follows.

	Number.	Gross Tonnage.
Steam vessels	1,775	577,235.45
Sailing vessels and barges.....	1,094	894,888.87
Canal boats	361	37,978.28
Total	3,230	1,410,102.60

The gross registered tonnage of the vessels built on the lakes during the past five years, according to the reports of the United States commission of navigation, is as follows:

Year ending June 30, 1893.....	175	99,271.24
" " " 1894.....	106	41,984.61
" " " 1895.....	93	36,352.70
" " " 1896.....	117	108,782.33
" " " 1897.....	120	116,936.98
Total	611	403,327.91

ST. MARY'S FALLS AND SUZ CANAL TRAFFIC. (From Official Reports of Canal Officers.)

	St. Mary's Falls Canals.			Suez Canal.		
	1897	1896	1895	1897	1896	1895
Number of vessel passages.....	17,171	18,615	17,956	2,986	3,406	3,434
Tonnage, net registered.....	17,619,933	17,249,418	16,806,781	7,899,374	8,500,284	8,448,383
Days of navigation.....	234	232	231	365	365	365

There is not a little significance in the manner in which the Carnegie company of Pittsburg fairly outbid its European rivals in the recent competition for armor contracts for the Russian battleships Peresviet and Oslavia. According to reports the other bids submitted were: England—Vickers, \$583.96; John Brown, \$569.38. France—St. Chamonds, \$490 and \$569; Chatillon, \$486 to \$536.50; Marrel Freres, \$530.70 and \$382 for thick and thin plates. Germany—Krupp, \$562.50; Dillingen, \$559.30; Witkowitz, thin plates, \$452.20. United States—Carnegie, \$537.45. The Russian government, it seems, offered the contract to the latter firm if it would accept \$500 per ton, the offer finally being accepted. The range of bids, if the figures are correctly given, would seem to indicate the absence of any combine between European armor manufacturers, although the success of Carnegie in this competition may suggest some such project. It is also gratifying to note that the United States government is securing armor at a price 20 per cent. lower than that paid by Russia, the contract recently awarded to Carnegie and Bethlehem allowing but \$400 per ton for the armor for the three new United States battleships.

When the program for the annual convention of the American Society of Civil Engineers, to be held at Detroit this month, made its appearance some time ago there was more or less speculation as to the exact nature of a paper on "Marine Wood Borers" scheduled for presentation. It now develops that this paper, regarding which the Review will probably have occasion to say something later, is in reality an exhaustive treatise by Charles H. Snow on the numerous forms of marine life which attack wood. Mr. Snow will point out that the destruction accomplished by these animals is very great, and that the extent of damage is not to be measured by the direct cost of replacement. He will also deal with the subject in some degree from a historical standpoint, and point out, for instance, how their presence affected the prosperity of Holland by weakening the pile foundations and other woodwork of the dykes. The paper considers the various species of borers, and in each case describes the characteristics and the destruction worked. There are enough wooden vessels on the lakes to make the subject of interest to marine men, aside from its bearing on breakwater and dock structures.

Friends of the United States revenue cutter service are bringing to bear every possible influence to secure the speedy passage by congress of the bill reorganizing the service and bestowing upon its members the benefits of retirement. In support of the measure it is pointed out that our revenue cutters were employed after the civil war in hostilities against France, that they served in the suppression of piracy as dispatch boats and for coast defense in 1812, and in the Seminole war and the war with Mexico, to say nothing of their operations in the civil war and the present conflict. In discussing this question the Army and Navy Journal says: "If we are to have custom houses stretching around the globe we shall have greater need than ever of efficiency in this branch of the public service. The accident of its association with a civil department should not mislead us as to its true character. Its officers hold their commissions by a life tenure, are specially educated for their work, have naval titles, command armed cruisers, and maintain naval discipline and drill aboard their ships."

It is the fashion to find a great deal of fault with our consular and diplomatic service. It needs, therefore, to be said of our representatives

in positions of this sort that "when they are good they are very good, and when they are bad they are horrid!" All that is necessary to make our diplomatic and consular service equal to the first in the world is to bring the whole service up to the level of its best part. And this can be done if the politicians will be a little more patriotic and will allow the president to appoint the best men he can find. We possess already a body of men, either now or at some former time in diplomatic and consular posts in the Orient, who could furnish plenty of talent for the reorganization and satisfactory government of a region like the Philippines. Gradually we are coming to the point of eliminating politics from these appointments to foreign service.—Review of Reviews.

The Detroit Free Press favors the Marine Review with a complimentary notice in referring to Mr. Barton's retirement. "The two young men in charge of the Review for the past eight years," says the Free Press, "have made of it what many others tried before them and failed to accomplish, the best weekly marine publication on the great lakes. Indeed, there is none in the country that can surpass it. While they have operated it on business principles, for the purpose of making money, yet they have never lost sight of the fact that the maintenance of any publication depends on the merit of its reading matter. The Review is not only wholesome to look at, but in every issue the information contained between its green covers is worth the time and close inspection of any man."

Capt. A. S. Crowinshield, chief of the bureau of navigation, navy department, and senior member of the naval war board, is very emphatic in his contention that it would be better policy for the government to spend all its available money for the improvement of the navy rather than upon fortifications. In a recent interview the captain was quoted as saying: "If we had thirty battleships we would not need fortifications. They would take the place of coast defenses. No nation could attack our coast. We should build armored cruisers something like the Olympia. We ought to have torpedo boat destroyers, but I am disappointed in what the boats of this type attached to Admiral Cervera's fleet have done."

Contractors who have had in charge the work of improving and deepening the Erie canal, which has resulted so disastrously, are awaiting with considerable anxiety the convening of the extra session of the New York state legislature. The contractors will make a big effort to secure a hearing, and in all probability a delegation will visit the governor before the opening of the session. The contractors seem to have numerous sources of sorrow in connection with the suspension of operations. In the first place, they had anticipated steady work all summer; many of them are unpaid for a considerable portion of their work; they have money tied up as a guaranty, and they have, in most cases, invested heavily in expensive new machinery, some of which has never been used.

An interesting apportionment of percentages prevails in the examination which the United States civil service commission has announced may be taken on July 21, in any city where the commission has a board of examiners, by applicants for place on a register of eligibles for the grade of inspector of hulls, steamboat inspection service, at Memphis, where a vacancy exists, the position being a \$1,200 one. The apportionment of subjects in the examination will be as follows: Letter-writing, 10; arithmetic (which will consist of problems in common and decimal fractions, mensuration and square root), 10; hull construction, 30; pilot rules and inland navigation, 20; life boats and life rafts, 10; experience, 20; total, 100. Two days will be allowed for this examination.

Large transactions are the order of the day in shipping circles in the east just at present. The purchase by the United States government from the Atlantic Transport Line of seven foreign-built ships aggregating 50,000 tons for \$4,000,000, has been followed by the announcement that the Atlantic people have secured the five new steamers of the Wilson & Furness-Leyland Line. In addition the Atlantic company has building at Belfast four new 600-foot vessels that will be ready for service next year. Friends of American ship building interests are naturally making much capital from the fact that the largest purchase made by the government since the commencement of the war is of vessels that were built in English yards and sailed under the British flag.

The \$150,000 coast survey vessel, the contract for which the government has just let to Lewis Nixon of Elizabeth, N. J., will in general appearance closely resemble the gunboat Annapolis, also built by Mr. Nixon, and, like the gunboat, will be of steel throughout, clipper bow, rounded stern, have a fair spread of canvas and a speed of 12 knots. The lines of the vessel indicate that she will be the most graceful in the service.

The condition of the vessels in the West Indian fleet would seem to justify the contention of Naval Constructor Hichborn that every vessel should have a bottom sheathing of wood and copper. It is announced that congress will take up the entire matter at its next session. A 4-inch sheathing is advocated not only in order to enable the maintenance of maximum speed but also to secure economy in coal consumption.

Edward Marsland, a well-known engineer who served extensively in the United States navy and was for three years superintending engineer at the Roach ship yard, Chester, Pa., died a few days ago at Sing Sing, N. Y. He entered the navy as first assistant engineer on the Unadilla, the first gunboat placed in commission for the civil war.

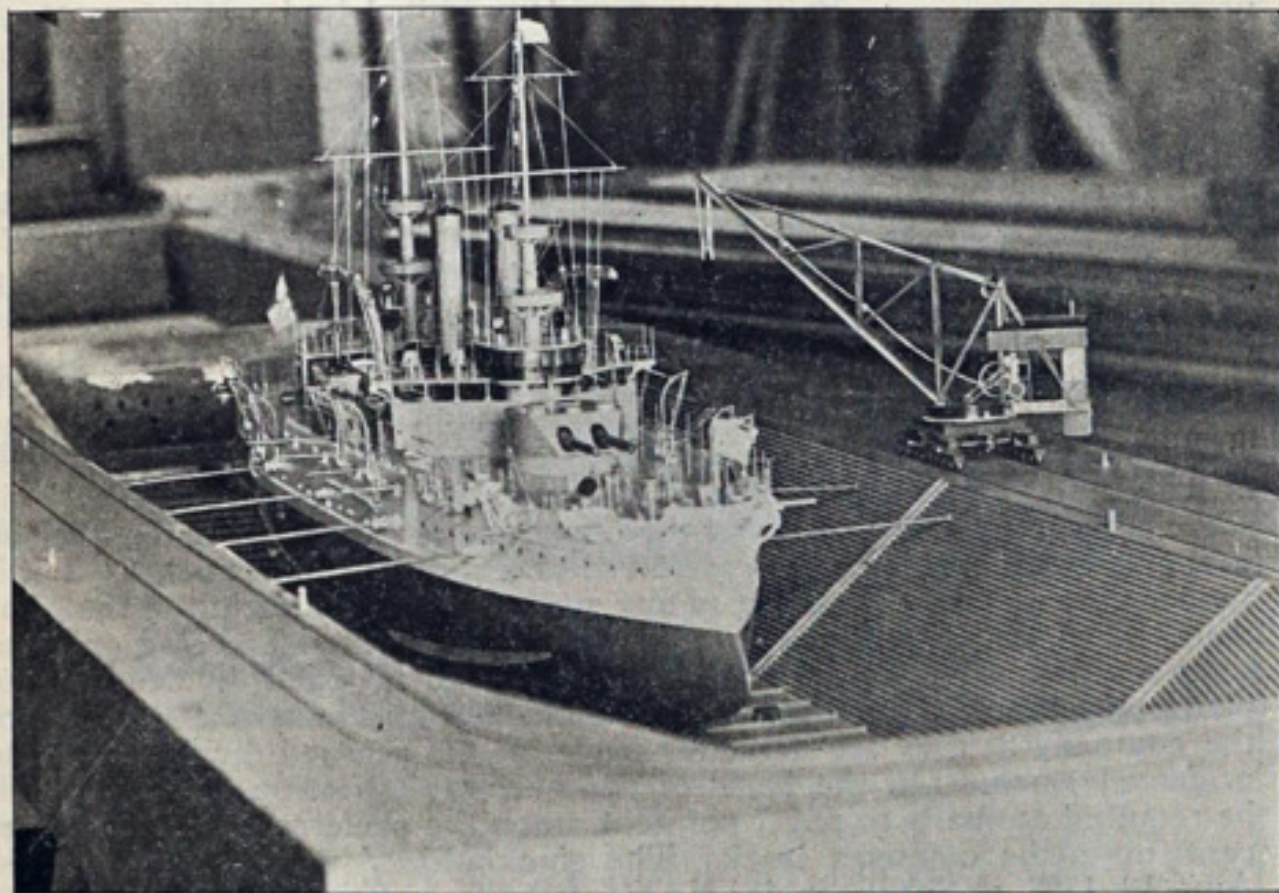
There arrived in Philadelphia this week three Russian naval officers, Capt. Danilensky and Engineers Franzevitch and Schernigowsky, who have come to this country to superintend the construction of the war vessels which the William Cramp & Sons Ship & Engine Building Co. is to construct for the Russian government.

A cablegram from London this week is to the effect that the British admiralty, with a view to testing the efficiency of the turbine system in warships, has authorized Parsons & Co. of New Castle-on-Tyne to build a torpedo boat destroyer capable of making 35 knots per hour, which would make her the fastest craft afloat.

A DRY DOCK AND ITS FUNCTIONS.

UNIQUE EXHIBIT AT OMAHA EXPOSITION PREPARED BY THE NAVY DEPARTMENT FOR THE ENLIGHTENMENT OF PEOPLE AWAY FROM THE SEA COAST.

There has just been finished at the Washington navy yard, under direction of Chief Naval Constructor Hichborn, and shipped to the Omaha exposition as part of the navy department exhibit at that place, a model which is probably unique. The pressing need for more dry docks in order to take proper care of the ships of our navy, and the ignorance of the people away from the sea coast of what a dry dock was and its functions, led Lieut. McCormick, who had charge of the exhibit, to suggest to Chief Naval Constructor Hichborn the construction of a working model of such a dock, believing that it would prove a most interesting feature, and it has been built during the past winter. It consists of an accurate working model on a scale of one-quarter of an inch to the foot, or one-forty-eighth of the full size. The model is constructed mostly of wood, but the inside is lined with brass plates brazed together in order to make it water-tight. It is an exact reproduction on that scale of the Simpson timber dry docks, which are to be built at the Portsmouth, Philadelphia and Mare Island navy yards, and in size and general dimensions of the new dry dock at the Boston navy yard, which latter, however, is to be built of concrete. These docks will be 700 feet long on the coping head to the outer gate sill; 162 feet, 6 inches wide on top; 71 feet wide on the bottom; 75 feet wide at the entrance on the bottom; 120 feet wide at



the entrance on top; 38 feet deep to the working floor, and the top of 3-foot keel blocks will be 30 feet below the mean high water line.

The model has been prepared in great detail so that the model ship which accompanies it can be docked and undocked just as the actual ship would be. A large basin is constructed outside the entrance, in which the model ship will be floated, and a complete system of piping and valves is provided, so that the dock can be flooded, allowing the model ship to enter, and then drained, leaving her dry on the blocks. A railing surrounds the three land sides of the dock, on which is a working model of a powerful traveling crane, used for handling heavy weights (40 tons being the capacity), which may need to be taken aboard of, or removed from a ship in the dock. The ship model, which is part of the exhibit, is an accurate reproduction on the same scale of the battleships Illinois, Alabama and Wisconsin, which are being built at Newport News, Cramps' ship yard in Philadelphia, and the Union Iron Works at San Francisco, respectively. These ships are 373 feet 9 inches long over all; 368 feet long on the water line; 72 feet 5 inches wide, and 23 feet 6 inches draft of water, with a normal displacement of 11,525 tons, and 10,000 indicated horse power, giving an estimated speed of 16 knots per hour. Their total coal capacity is 1,200 tons. They carry four 13-inch guns in turrets 13 inches thick, and fourteen 6-inch rapid fire guns behind casemates of 6-inch armor. The side armor extends from the stem 278 feet aft, and is 16½ inches thick, tapered at the forward end to 4 inches. The conning tower is 10 inches thick, and the armor deck 2¾ inches thick amidships and 5 inches thick at the ends of the ship. They also carry a secondary battery of sixteen 6-pounder rapid fire guns, four 1-pounder rapid fire guns, one Gatling, and one field gun.

Growth of Japanese Ship Building.

The rapid growth of the Japanese ship building industry would seem to indicate great possibilities for American manufacturers of ship yard machinery and supplies, as well as for American naval architects for whom the Japanese builders are manifesting a decided preference. There are at present seventy-one ship building yards in Japan. Many of them are small, providing accommodation only for the repair of Japanese junks or sailing vessels, but there are several that are credited with the construction of large ships. Those which undertake to build steamers are the Osaka Iron Works, the Mayegawa Dock Yard, the Fujinagata Dock Yard, the Osaka Ship Building Co., the Osaka Dock Yard Co., the Mi-hava Dock Yard, and a few others. During the past year fifty-four steamers were constructed, several of which were over 600 tons. In addition sixty-one wooden vessels were built chiefly for use on the canals and rivers. The Japanese mercantile marine consists of 735 vessels with a total tonnage of 390,334 tons, of which 570 are steamers with a tonnage of 363,223 tons and 165 sailing vessels with a tonnage of 27,111 tons. Only 126 vessels are over 1,000 tons and only seventeen are over 3,000 tons. Last year 115 steamers and five sailing vessels were engaged in the foreign trade.

The Labor Problem in British Ship Yards.

In its issue of last week the Review had something to say regarding the bill now before congress to enforce the eight-hour work day in connection with all government work, including, of course, the construction of naval vessels, and summarized some of the very excellent arguments against it presented to the senate committee on labor by representative American ship builders. This circumstance contains just a suggestion of a condition now existent in the ship yards of England, and which, looking at it from the standpoint of the furtherance of the American ship building industry, the prosperity of the American ship builder, and even of the workmen themselves, it is not only desirable, but really essential, should never find a counterpart on this side of the Atlantic. The active, progressive ship builder of the United States has, however, by constant watchfulness for new and improved machinery, virtually placed himself beyond the possibility of unreasonable demands by labor, while the British builder, on the other hand, has gradually allowed himself to be made more completely subservient to the tyranny of the walking delegate. That the introduction of improved methods and machinery is not the only factor that will contribute to the rapidly approaching superiority of the American ship builder has not been more clearly demonstrated than in the almost pathetic plaint of a prominent English ship builder who has addressed a communication to Fairplay of London. He says in part:

"We note that there is a proposal on foot for weekly wages being paid all over the kingdom. We do not know what our lot will then be, if the men should lose as much time every pay as they do at present. It is quite a common thing for some of them to turn up on Thursday or Friday after the pay, and the remainder on the second Monday following. These drinking bouts have become much more common for the last two or three months, and are gradually growing worse. For instance, our pay day was last Saturday, and today (Thursday following) we have only three sets of riveters working out of fifteen sets employed on one vessel.

"Our German and Norwegian customers are now getting their vessels built at home. One of our customers, a large buyer of machinery, was forced to go to America and Germany through the recent lock-out here, and he states that he found the American tools to be much superior to the English make, and on that account will not come back to the English market. When these facts are mentioned to our men they simply won't believe them, they are so puffed up with their ideas of superiority. It was a bad day for ship builders when they gave in to the restriction of apprentices. Quite a lot of work could be done by apprentices, but we cannot employ the lads we wish, as such, and they are reared up as helpers, or go to fill the ranks of unskilled labor, whereas quite a number of these could be taught a trade. Had the builders a free hand to employ whom they like as apprentices, a better class of lads would be introduced to the riveting trade than at present.

"Another point: We heard of a case where two riveters and a boy were ready to work and were offered a job, but the rules of the society debar two riveters working without a holder-on. The shop steward was applied to by the foreman, and the rest of the men asked if they would allow the two riveters to go to work at a job that was pressing, and the answer was: 'No; if they go to work we will all stop.' When these two men get a holder-on only one riveter can work, and the other sits down and looks on at his mate working, the object being to prevent the employer having any excuse for not paying the full list price; fancy the ship builders submitting to this! The competition of Americans is sure to be a very serious matter for British ship builders by and by; they can produce some classes of work as cheaply as we can at the present time. In our experience, when we had shipwrights and joiners on piecework we could produce work for just about half what the same job now costs, this being simply due to the fact that the men idle away half their time."

July Weather on the Lakes.

Following is an extract from the lake chart for July issued by the United States weather bureau: "While the weather of summer is the least boisterous of the year, there are yet occasional brief periods of treacherous squall winds that require the exercise of care and vigilance on the part of vessel masters. The element of danger in the squall winds lies not so much in their strength as in the sudden shift of the wind and the momentary violence experienced. The weather bureau issues warnings to vessel men whenever the conditions threaten severe thunderstorms and squally weather. These warnings may be ably supplemented by the masters themselves in observing the state of the sky, especially during the afternoon. The color of the storm cloud and its height above the surface of the lake quite often afford a measure of its violence. Thus storm clouds of a dark green or olive color, especially when flying near the surface of the lake or ground, indicate severe squall winds. Thunderstorms and squall winds almost invariably occur with a falling barometer and on warm, sultry days."

The chart contains this paragraph with reference to the changes in the barometer: "In making a trip from Duluth to Buffalo the changes in the barometer, supposing, of course, that normal weather conditions prevail throughout the entire passage, should be as follows: Starting at Duluth in July, the barometer should read about 29.31 inches; at Marquette it should be about 29.29; below the locks at the Sault, about 29.31; at Alpena, 29.34; Port Huron, 29.39; Detroit, 29.39; Cleveland, 29.40; and Buffalo, 29.36. On Lake Michigan, the barometer should read about 29.37 or 29.38 under normal conditions."

It is claimed that of the twelve passenger steamers of over 10,000 tons afloat, eight are German and only two English. In the matter of speed, out of twenty-four liners with a speed of 19 knots or above, seven are German, six English, five Russian and the remainder apportioned among other nations.

A new accommodation train.—July 5 the Nickel Plate road will place in service between Cleveland and Bellevue a very convenient train, leaving Cleveland daily, except Sunday, at 8:30 a. m. Returning, leave Bellevue 4:30. Connection is made with the C. S. & H. R. R. for Bucyrus, Marion, Delaware and Columbus. This train makes an excellent Pleasure Grove train out of Cleveland, for Oak Point Beach and Vermillion. 124, July 2)

New Contracts in Ship Building.

The W. H. Glover Co. of Rockland, Me., has secured the contract to build a \$7,000-life-saving station at Sandy Point, Block island, near Long Island sound.

The Harbor Ship Chandlery Co. of Ashtabula Harbor, O., has completed a windlass engine for the schooner Wadena and is building one for the schooner Becker.

The steamboat St. James, building at Coffin's marine ways at Jeffersonville, Ind., for the New Orleans and Bayou Sara route, will be ready for launching within a few days.

W. D. Forbes & Co. of Hoboken, N. J., have completed a compound engine 5 and 11 by 7½ inches for the 42-foot steam launch building by Charles E. Hyde of Bath, Me., for his own use.

Henry A. Tolbert of Barnegat, N. J., has secured the contract to build eight life-saving stations on the eastern coast. The aggregate cost will be \$60,000 and the contract must be completed by May 1, 1899.

A. C. Brown & Son of Tottenville, Staten Island, are building an 85-foot tug for Flannern Bros. The engine will be supplied by M. Elssesser of South Brooklyn, N. Y., and the boiler by W. J. Davidson of Port Richmond, N. Y.

R. M. Spedden & Co. of Baltimore will likely be awarded the contract for the extensive repairs to be made on the United States revenue cutter Forward. The firm put in the lowest bid, which was \$57,000. One firm asked \$107,900.

The Bath Iron Works Co. of Bath, Me., this week launched the steel steamer Winifred, building for Miller, Bull & Knowlton of New York. This vessel is 304 feet over all, 42 feet beam and 25 feet depth of hold, and is the first steamer of the tramp kind built in this country.

August Busch of St. Louis is to let the contract for a stern-wheel pleasure boat, 84 feet long and 18 feet beam. She will have Schoelhorn-Albrecht lever engines with cylinders of 10 inches and 4-inch stroke; Rohan & Son's boilers, 14 feet long and 49 inches in diameter with a pressure of 200 pounds.

The New London Steamboat Co. of New London, Conn., has just launched the steamer Old Glory, building for Capt. James F. Smith. She is 140 feet over all, 27 feet beam and 9 feet depth. She has two triple expansion engines built by the Hyde Windlass Co. of Bath, Me., and two boilers of 250 pounds pressure furnished by the Almy Water Tube Boiler Co. of Providence, R. I.

The Burlee Dry Dock Co. of Port Richmond, S. I., have secured from F. B. Dalzell & Co. the contract for a tugboat to be delivered Jan. 1, 1899. She will be 105 feet over all, 23 feet beam and 12 feet depth of hold; fore and aft compound engines with cylinders 18 and 36 inches by 26-inch stroke; Scotch boiler with three corrugated furnaces. The Burlee company has a seagoing tug for the Tice Towing Co. on the stocks and a barge for the J. B. King Plaster Co. in frame.

A Gigantic Russian Ice Crusher.

The fact that representatives of the Russian government visited the country to inspect the ice crushers in use on the lakes, and that officials of the Detroit Dry Dock Co. went to St. Petersburg for a conference on the same subject, lends interest, on the part of lake marine men, to the gigantic ice crusher which the Russian government is now having constructed in England. The vessel is intended for use in keeping an open navigable way during winter to Cronstadt and St. Petersburg, and in summer is to be stationed in the Kara sea, to keep open a way for vessels trading with North Siberia. Some idea of the magnitude of the crusher now building may be gained when it is stated that at present the most powerful vessel of this type in existence is the Nadeschny, stationed at the port of Vladwostock in Russia. Her cost was \$225,000, and she is provided with engines of 3,600 horse power, which enabled her, at her trial last year in the Gulf of Finland, to force her way through ice very much thicker than that which is encountered in the Straits of Mackinac by the vessels built at Detroit. The vessel now in course of construction, however, will have engines of 10,000 indicated horse power and will cost \$875,000. She will not only have a double bottom throughout her whole length of 305 feet, but will also be provided with a double skin up to a few feet above the water line, with a space of about 3 feet between the skins. She will have four sets of engines of a special make, one set being located forward for working a plurality of screw propellers, and the other three will be placed aft and connected with three screws. Bunkers will be provided for 5,000 tons of coal, the daily consumption being about 161 tons. The vessel is to be finished by the end of the year, and should her trial trip prove successful, the keel will immediately be laid for a sister ship.

Trade Notes.

The Joseph Dixon Crucible Co., Jersey City, N. J., are now placing on the market a solid belt dressing in round bars, about 8 inches long and 2 inches diameter. It makes a package convenient to the hand, and easy to apply, even to fast running belts. The company does not claim that the solid dressing is as good a preservative of the life and elasticity of the leather as the Dixon paste, but it is quick to apply and quick to act, and that is what is wanted by the general run of belt users.

W. D. Kearfott, who has represented the Geo. F. Blake Mfg. Co. in Cleveland for some time past, and who is favorably known to everybody on the lakes who has occasion to use pumps, has left Cleveland to take up a position with Mr. Wheeler in the condenser department of the Blake company's general offices, New York. Mr. Kearfott was here for only a few years, but he leaves on the lakes a circle of friends and acquaintances that would represent with most persons the efforts of a lifetime.

The McMyler Manufacturing Co. of Cleveland has received from the Deseronto Iron Works Co. of Deseronto, Ontario, an order for three direct hoists for unloading ore from boats direct to the stock houses. A feature of the machines is found in their range of operation, it being necessary to carry the ore a distance of over 600 feet. The McMyler company has also received from Hughes Brothers & Bangs, public works

contractors of Syracuse, N. Y., an order for a heavy derrick to be used in the handling of 20-ton loads in the construction of a new breakwater at Old Point Comfort, Va.

In three weeks' time in the month of June the American Ship Windlass Co. of Providence, R. I., received orders for ten steam towing machines of the Shaw & Spiegle type, such as are used on all the big steel tow barges of the lakes. The tendency towards handling barges in tows on the Atlantic coast, as well as on the lakes, has greatly increased the demand for these machines. No barges are now built on the lakes without them. The Rockefeller steel barges, now nearing completion at West Bay City, and which are expected to carry about 7,000 tons each, are fitted with the latest make of these machines.

When the works of the B. F. Sturtevant Co. at Jamaica Plain, Mass., were recently extended and rearranged, it became necessary to remove the boiler plant to such a distance from the previous location as to render further use of the existing chimney entirely out of the question. Recourse was therefore had to mechanical means of draft production and a Sturtevant fan was installed as a substitute for a chimney. This method has proved so satisfactory that the chimney has just been taken down for the sake of the brick it contained, and the somewhat unusual sight is now presented of a large establishment, in which the only evidence of a chimney is that presented by a small, steel-plate stack extending a few feet above the boiler house roof.

There is a very remarkable record to the credit of Pocahontas coal, in that it was the fuel used on the trial trips of eighteen vessels of the United States navy, which were enabled, by excess of contract speed, to obtain premiums as follows: Baltimore, \$106,442; Philadelphia, \$100,000; Newark, \$36,857; Bancroft, \$45,000; Detroit, \$150,000; New York, \$200,000; Machias, \$45,000; Castine, \$50,000; Columbia, \$350,000; Marblehead, \$125,000; Montgomery, \$200,000; Minneapolis, \$400,000; Maine, \$29,200; Indiana, \$50,000; Texas, \$1,000; Massachusetts, \$100,000; Brooklyn, \$350,000; Iowa, \$217,420; total, eighteen vessels, \$2,555,919. About twenty carloads of hand-picked Pocahontas coal was shipped a few days ago to Philadelphia, to be used on the official trial of the Japanese cruiser now nearing completion at the yard of the William Cramp & Sons Ship & Engine Building Co.

Directors of the General Electric Co., at a recent meeting, voted to recommend to the stockholders a reduction in the share capital of the company, both common and preferred, of 40 per cent., so that each holder of 100 shares of present stock will get sixty shares of the new stock. This settlement, while satisfactory to the common stockholders, is regarded as particularly favorable to the preferred shareholders, inasmuch as it will render unnecessary the taking of any steps for the liquidation of the company, in which event the preferred stockholders would receive only the same amount as the common stockholders and no back dividends. The plan now adopted contemplates the payment, from the surplus earnings of the company as they are hereafter made, of the accrued dividends on the preferred stock. On the basis of the new capitalization, \$1,275,000 will be required annually to pay 7 per cent. upon the preferred stock and 6 per cent. upon the common stock. The stockholders' meeting will be held Aug. 10, 1898, at Schenectady, N. Y.

Should congress concur in an amendment to the deficiency appropriation bill presented by Senator Gorman, the claims of the William Cramp & Sons Ship & Engine Building Co. for damages and losses sustained by reason of the failure of the United States to promptly and properly furnish armor and other material for use on naval vessels under construction for it, will be referred to the court of claims for adjustment, the proviso being made that the company is to be "fully, fairly and equitably" compensated.

Summer service on the elegant Providence line passenger steamers running between New York and Boston was resumed for the present season on July 1. The steamers Plymouth and Rhode Island will make daily trips, touching at Newport.

On Sundays parties of five or more can go anywhere and return within one hundred miles on the Nickel Plate road for \$1.00 for the round trip. Ask agents.

107, July 31.

TREASURY Department, Office of General Superintendent U. S. Life-Saving Service, Washington, D. C., June 25, 1898. Sealed proposals will be received at this office until 2 o'clock p. m. of Thursday the 21st day of July, 1898, for furnishing supplies required for use of the Life-Saving Service for the fiscal year ending June 30, 1899; the supplies to be delivered at such points in New York City, Grand Haven, Mich., and San Francisco, Cal., as may be required, and in the quantities named in the specifications. The supplies needed consist of Beds and Bedding; Blocks and Sheaves; Cordage; Crockery; Furniture; Hardware; Lamps; Lanterns, etc.; Lumber; Medicines, etc.; Paints, Oils, etc.; Ship Chandlery; Stoves, etc.; Tools, and Miscellaneous articles; all of which are enumerated in the specifications attached to the form of bid, etc., which may be obtained upon application to this office, or to the Inspector of Life-Saving Stations, 24 State Street, New York City; Superintendent Eleventh Life-Saving District, Grand Haven, Mich.; and Superintendent Twelfth Life-Saving District, New Appraisers' Stores, San Francisco, Cal. Envelopes containing proposals should be addressed to the "General Superintendent U. S. Life-Saving Service, Washington, D. C.," and marked on the outside "Proposal for Annual Supplies." The right is reserved to reject any or all bids, and to waive defects, if deemed for the interests of the Government. S. I. Kimball, General Superintendent. July 7.

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Solicits Catalogues, Prices and Discounts from manufacturers and wholesale dealers in Ship Machinery, Brass Goods, Rope, Paints, Asbestos, Packing, Hose, Furniture, Piping, Glass and Crockery, Tinware, Ranges, Carpeting, Bedding, Life-preservers, Rafts and Boats, Engineers' Supplies and Tools, Carpenters' Tools, Electric Supplies, Lamps, Grate Bars, Castings, etc., etc., etc.

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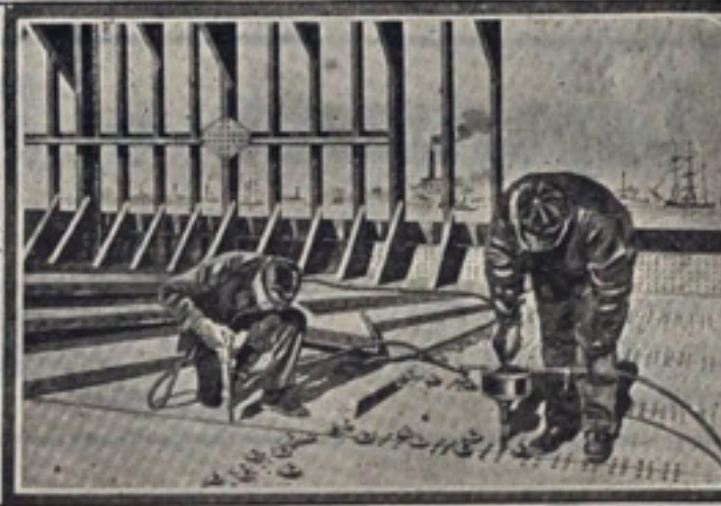
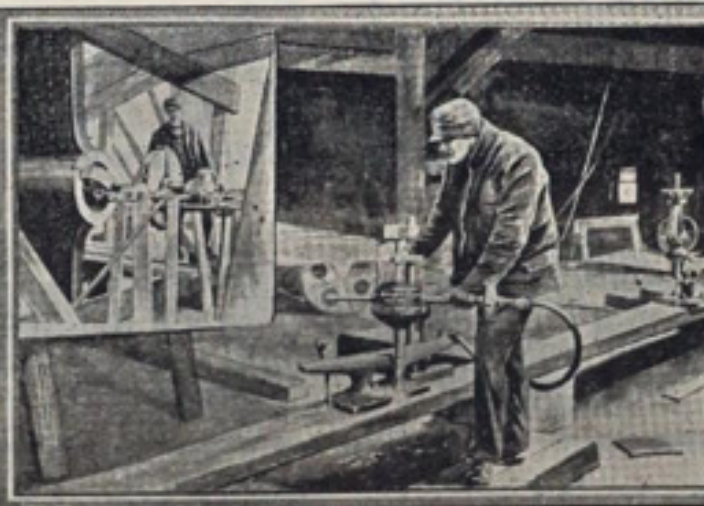
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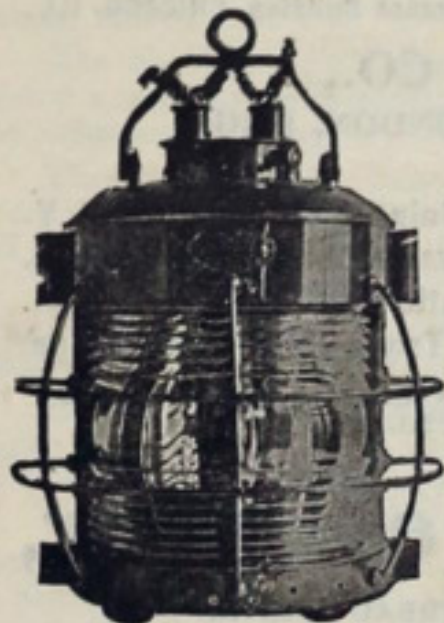
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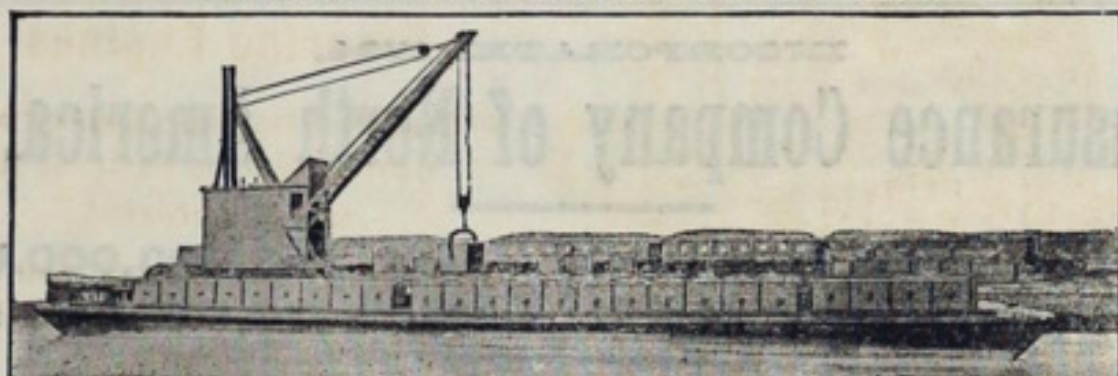
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FUEL DOCKS—River Bed, through Valley Railway
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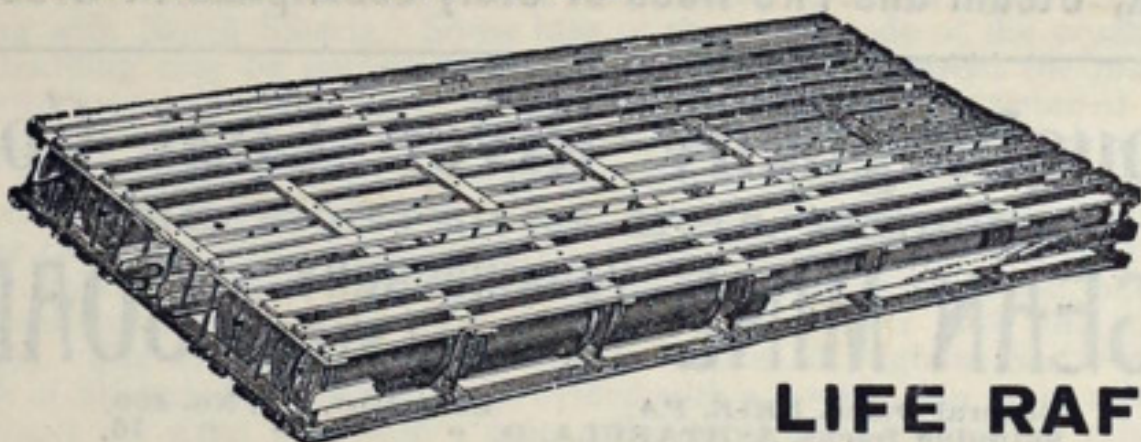
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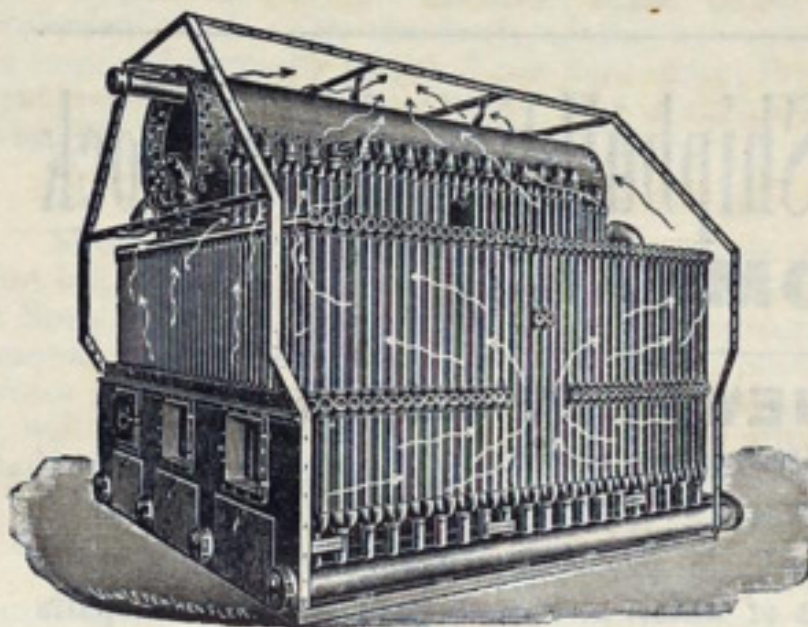
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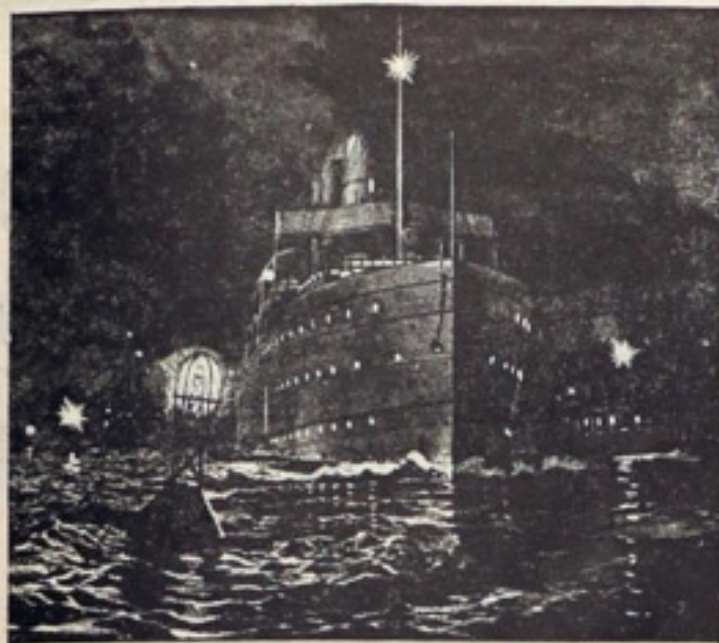
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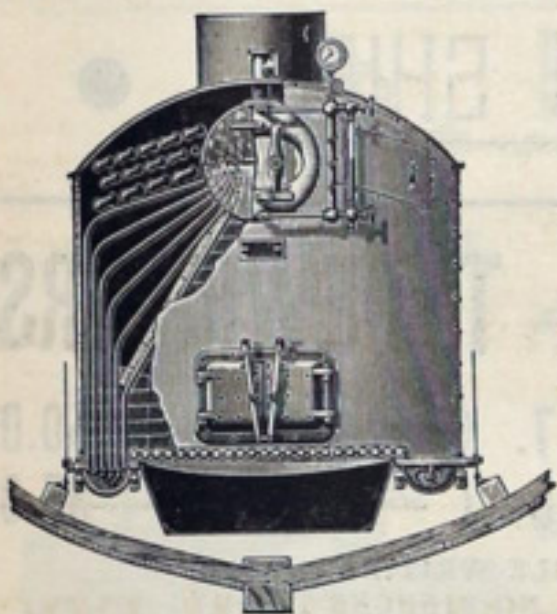
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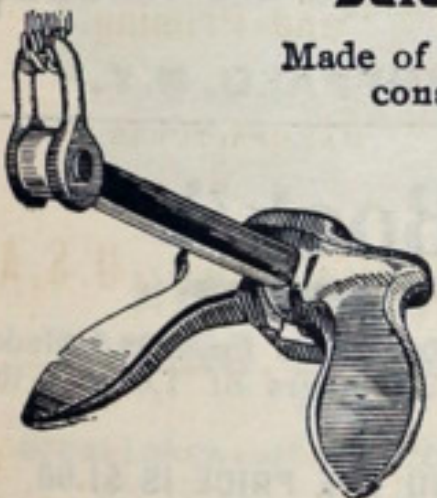
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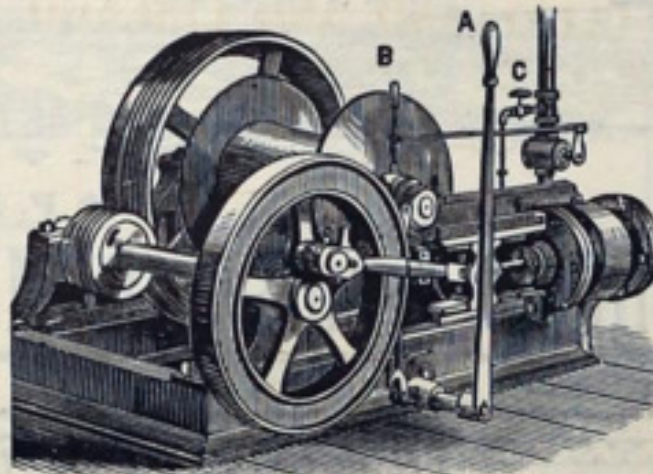
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LEWIS NIXON.



THE CRESCENT SHIPYARD.

ELIZABETH, N. J., June 25th, 1898

The Marine Review,
409 Perry-Payne Building,
Cleveland, Ohio.

Gentlemen:-

I beg to enclose herewith a check for \$5.00 and request that you will send me a copy of the 1898 Blue Book of American Shipping, have seen the book and think that it is a most excellent publication, and one that will be of value to everyone having to do with ships or shipping.

Yours truly,

Dictated.

Scudis on

TO THE PACIFIC.

Pacific Coast Steamship Company

Goodall Perkins & Co. General Agents

San Francisco

22nd June 1898 189

Blue Book of American Shipping,
409 Perry-Payne Bldg.,
CLEVELAND OHIO.

Gentlemen,-

We have your publication for last year and hence you need not send it as a matter of trial as we know the publication and consider it satisfactory.

Herewith we enclose our check for which please send us the Blue Book for 1898.

Yours truly,

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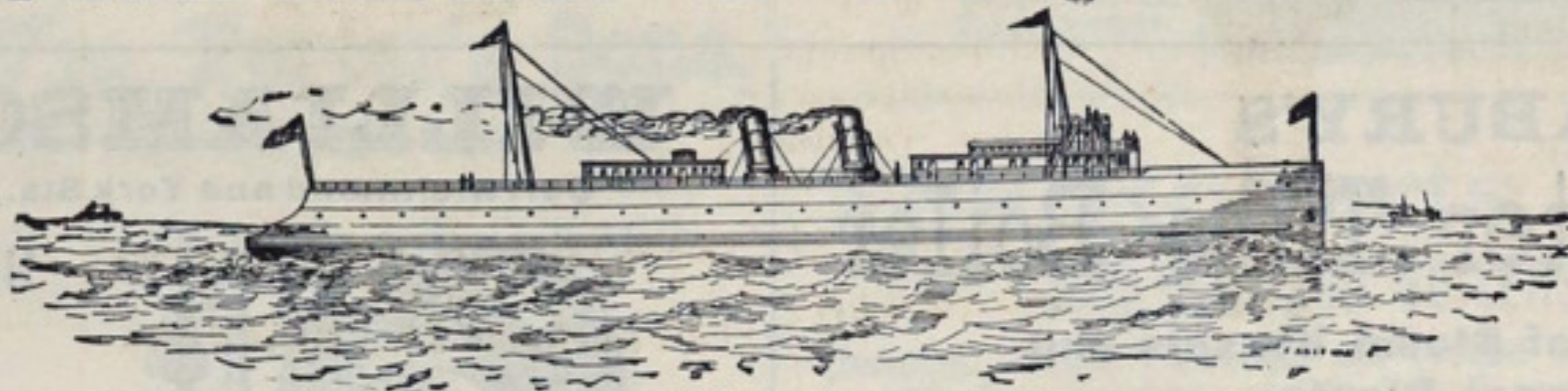
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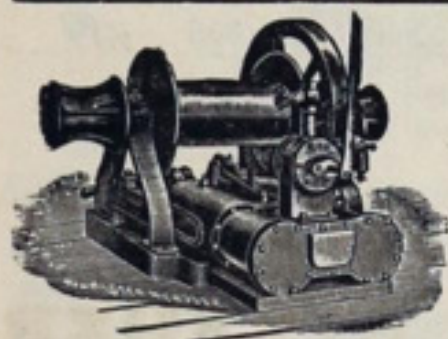
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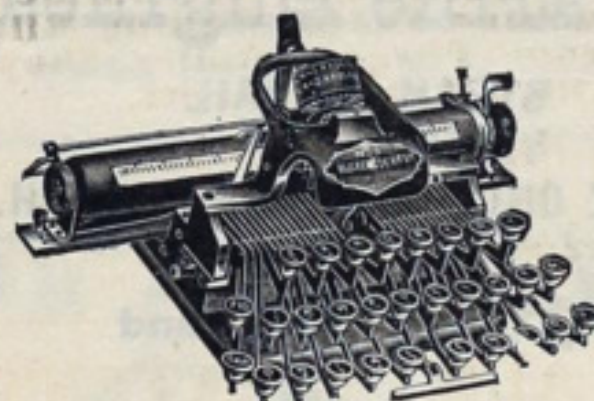
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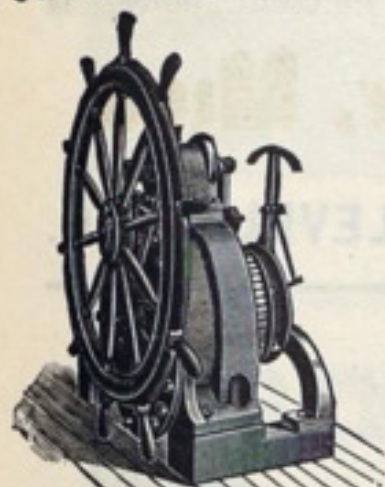
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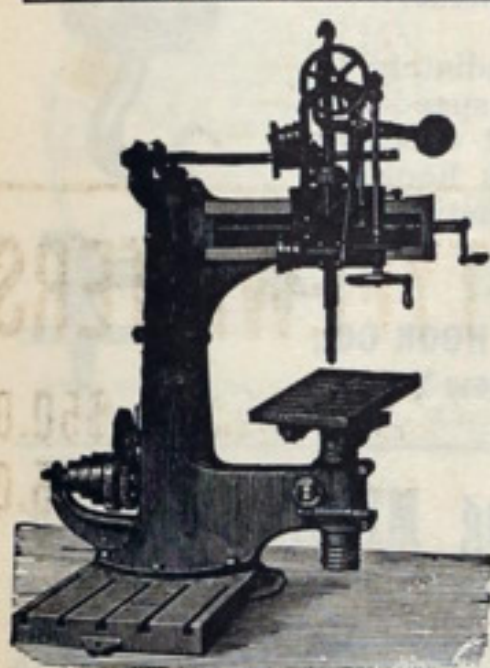
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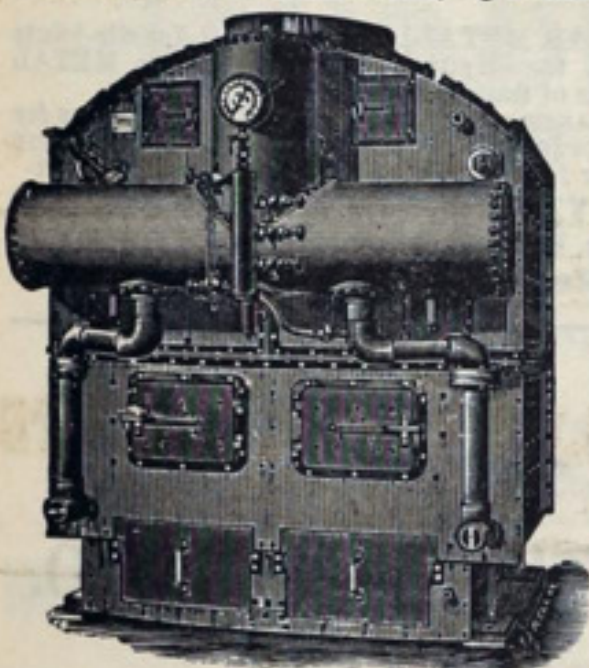
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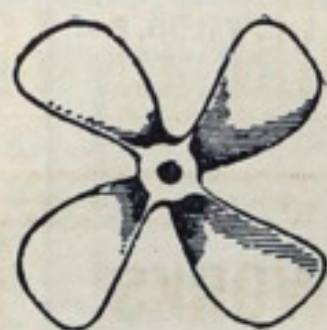
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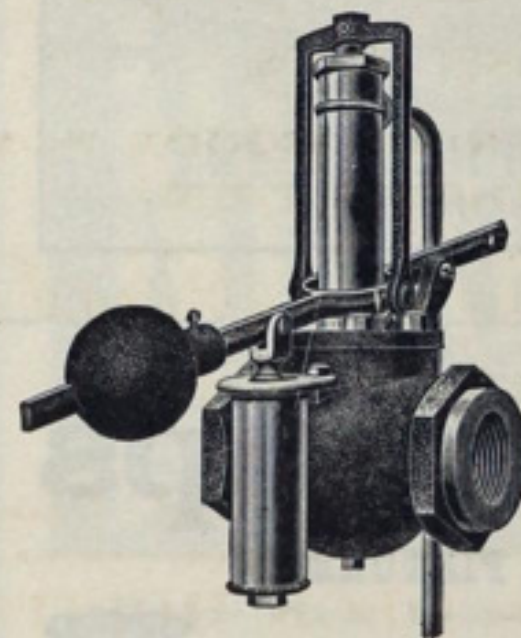
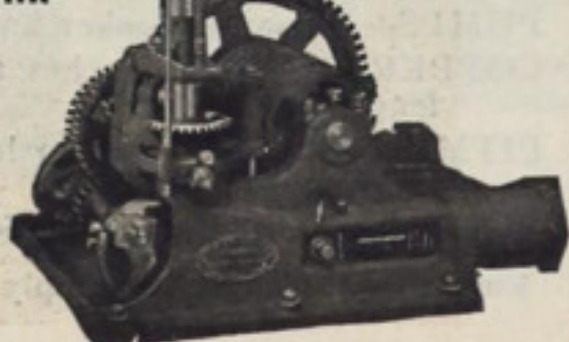


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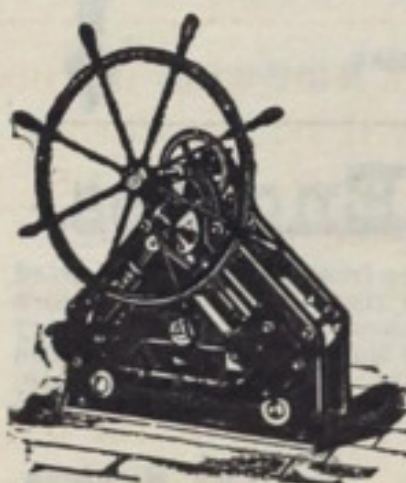
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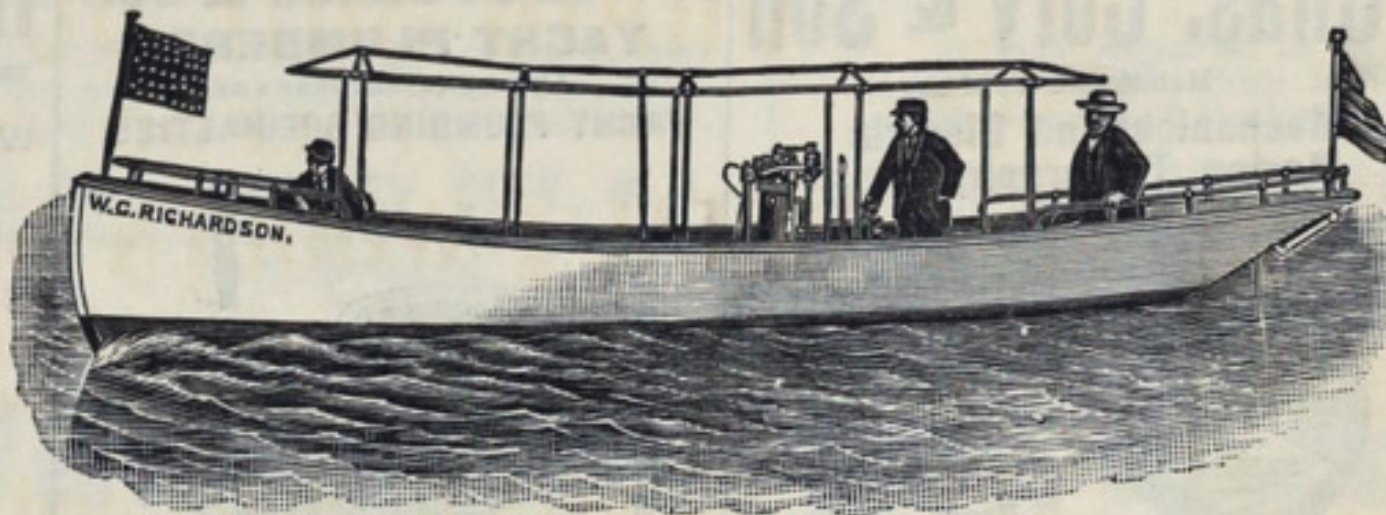


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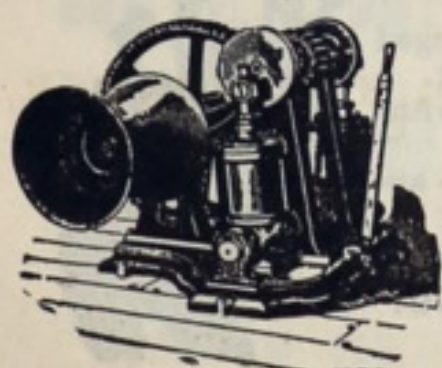
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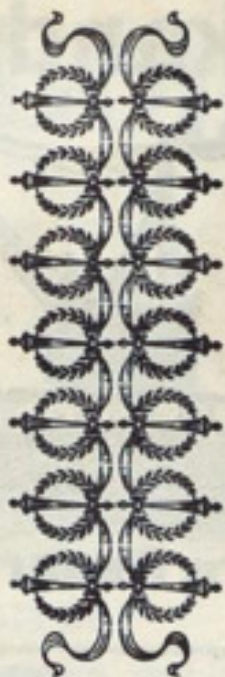
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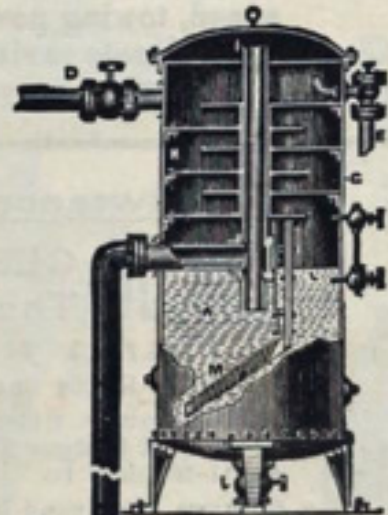
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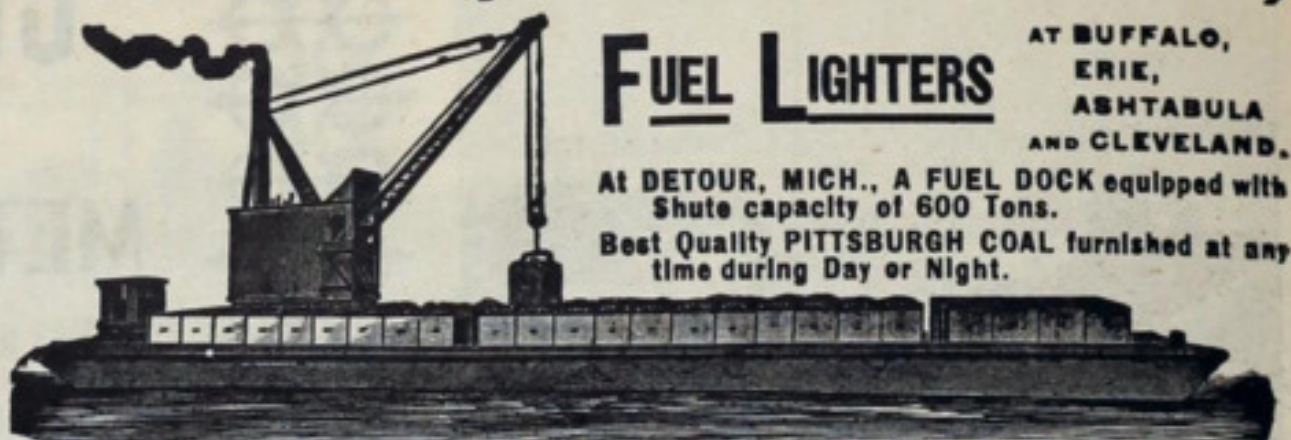
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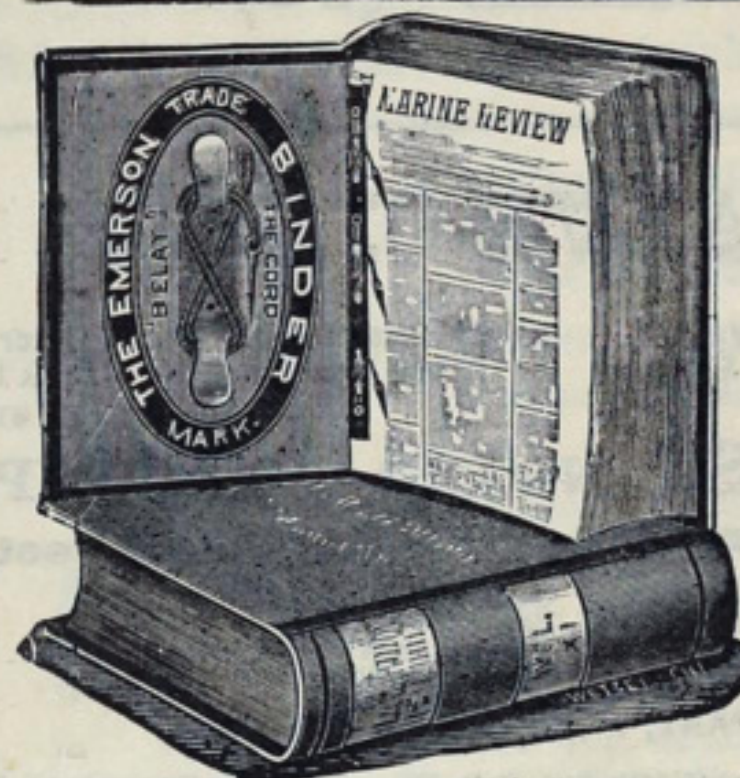


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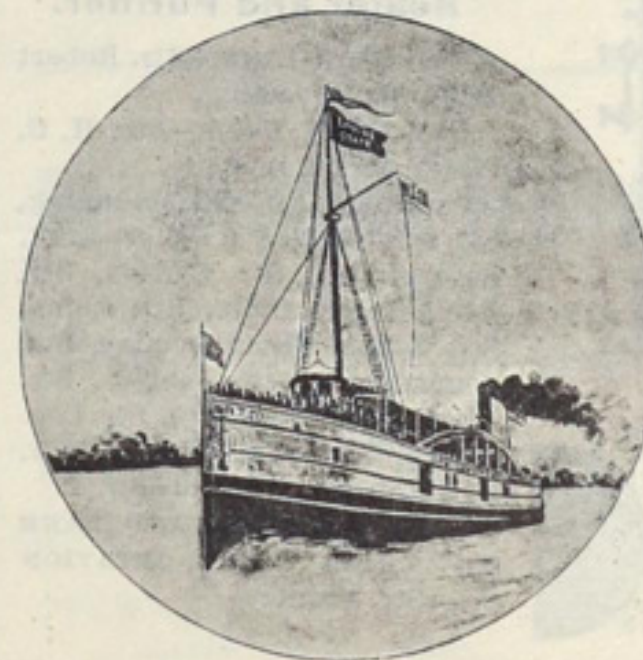
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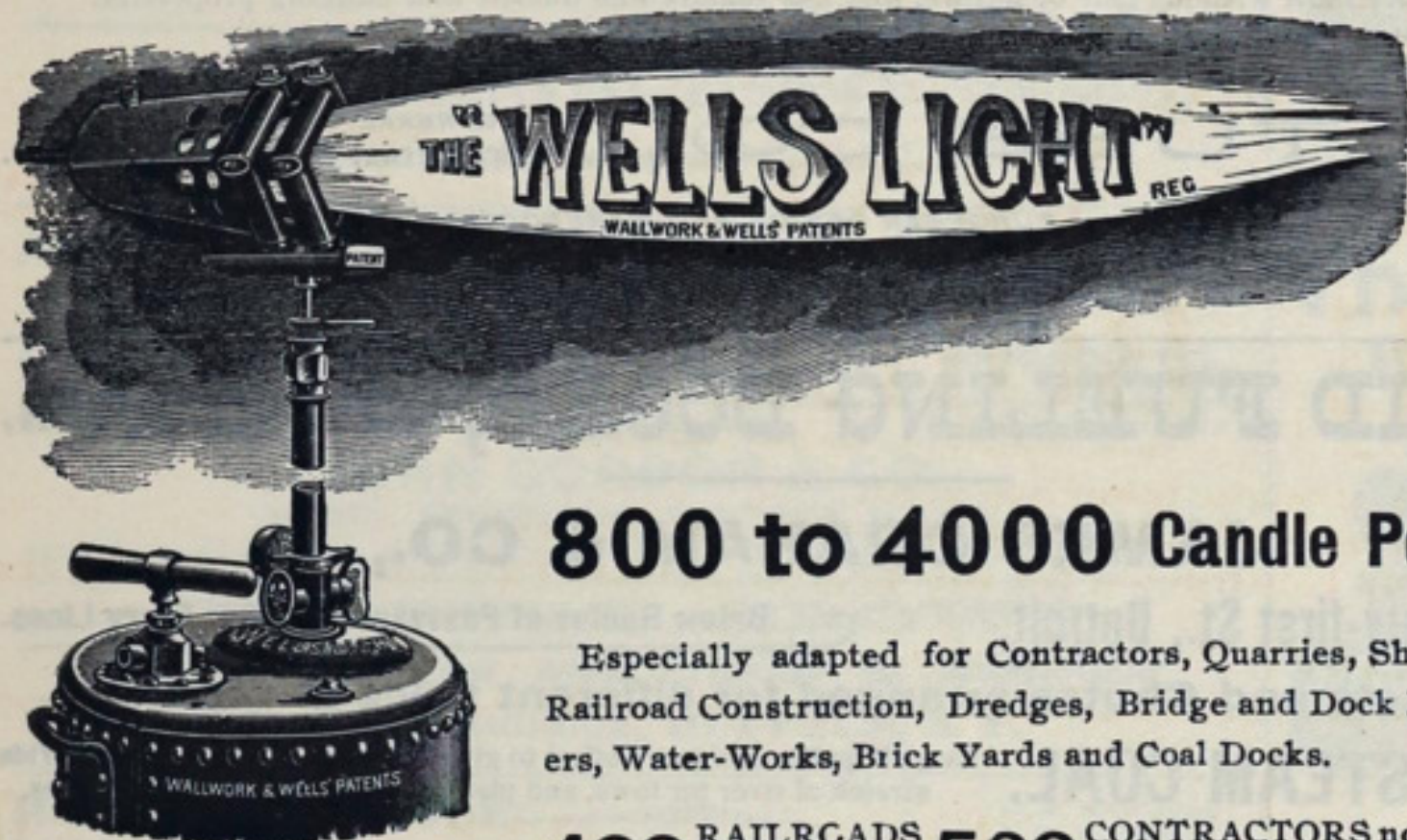
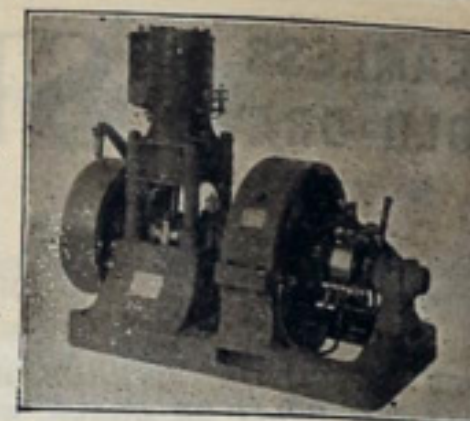
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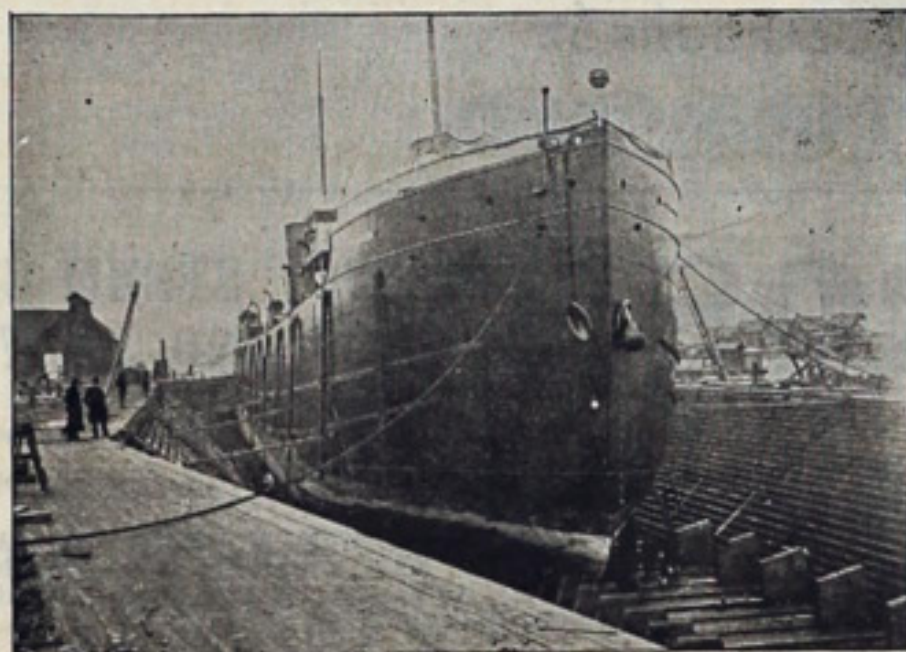


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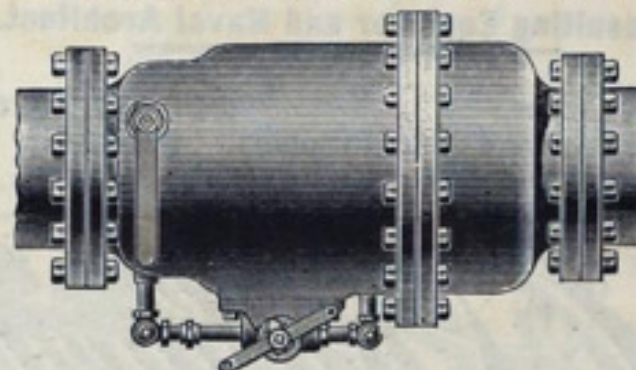
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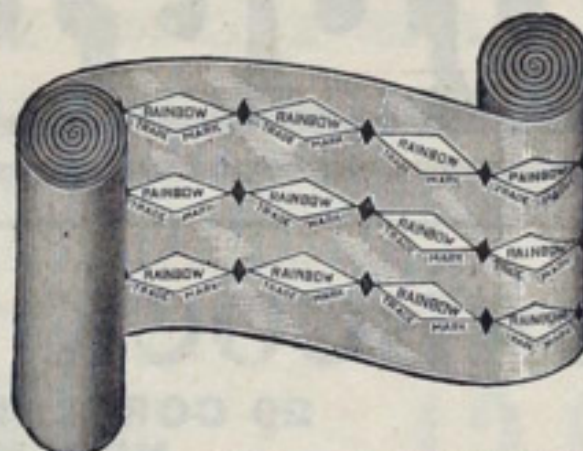
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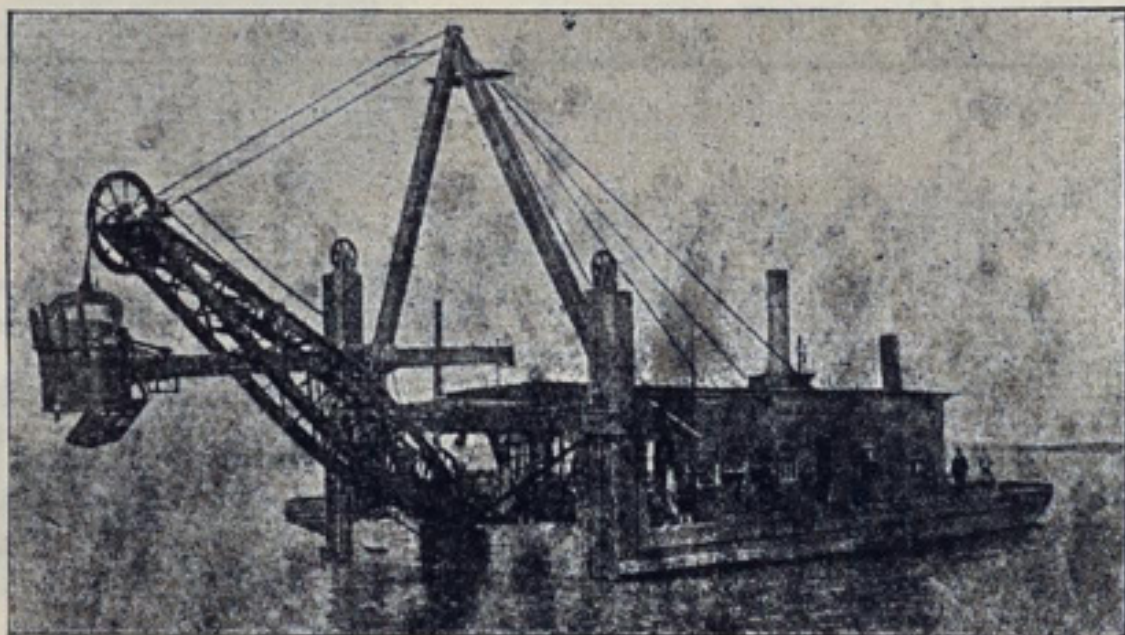
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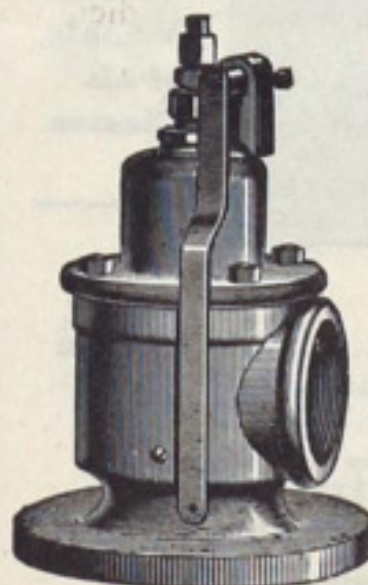
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